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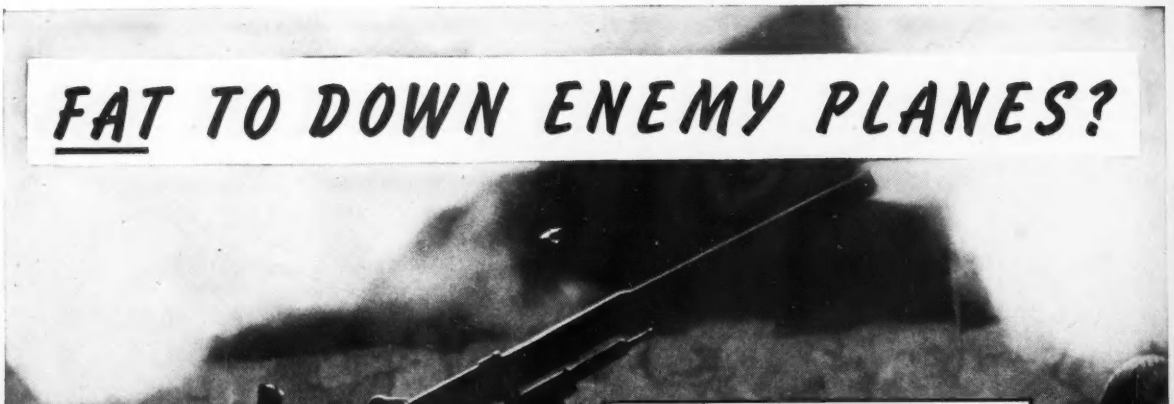
FAT TO DOWN ENEMY PLANES?



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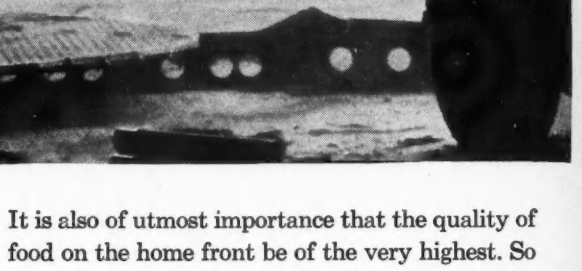

PRESIDENT'S ADDRESS[1]

NELL CLAUSEN

Milwaukee Children's Hospital

THE Twenty-Seventh Annual Meeting of the American Dietetic Association opens in the midst of an era of unprecedented interest and progress in the field of dietetics. Although members of our profession have plodded doggedly along for more than two decades trying to instil in the minds of the people the fact that nutrition is a science basic to effective living, it has taken a war with its attendant selective service examinations to bring to the civilized human race the realization that application of the science of nutrition is fundamental.

Primitive man appreciated food because his very existence depended upon his ability to find a daily supply. For this reason, around food he wove all his beliefs, theories, and religious and social customs. From these customs, built up and modified by different tribes as they broke off one from another or migrated to greener pastures, originated the food habits, good, bad, and indifferent, which we now practice and which are so deeply rooted and so difficult to change.

Our Association is dedicated to the "improvement of the nutritional status of human beings," as stated in our Constitution; we have worked faithfully toward this end, but it is evident that the success of our efforts has been limited.

In the past this has been due to the low incomes of many families, the reluctance of individuals to accept new foods, the small number of dietitians actively engaged in promoting good nutrition, lack of coordination with allied professions, and our too pedantic approach to the subject.

Now, with the incentive of this great war emergency, nutrition education of the many has made an amazing start. Members of our profession and allied professions must keep this movement alive and working to the extent that every child in every land will soon receive his birthright—*good nutrition.*

Considering the degree of malnutrition now in existence, in our own country and especially in war-torn areas of other continents, this goal seems remote and unattainable. A plan for supplying adequate nutrition for all is quite involved. It begins with the physiologist and biochemist, includes the agriculturist, the food technologist, the canner and the packer, and involves the transportation systems of the world. Very important in this setup is the dietitian, skilled in the practical application of the science of nutrition, who must not only feed correctly the groups of people who are her particular assignment but must be ever ready to interpret the standards arrived at by research nutritionists for simple everyday use by communities and families.

Not only is the dietitian qualified and eager to help with applied nutrition, but she is in a position to make valuable contributions to nutrition research, working on problems alone or in collaboration with the physician and the biochemist. Since the goal of the biochemist—the description of living systems in completeness—has not been attained, there is still much room for workers in this field.

Many agencies, both government and private, are contributing to the present nutrition education program. Outstanding among these are the National Research Council, the Bureau of Human Nutrition and Home Economics, the Office of Distribution of the War Food Administration, the American Red Cross, and the Nutrition Foundation. It is to be hoped that their programs will continue to the end that we may attain our ultimate aim, a well-fed world.

The American Dietetic Association was the first organization of its kind to be established in any country and it is with a great deal of pride and pleasure that we hear of similar organizations being founded in other countries, which may have been motivated by the success of our own organization. The *Newsletter* of the British Dietetic Association states, "It is not possible to discuss dietitians in the pre-war period without paying tribute to the women of vision and initiative, who journeyed to America to study the new science of nutrition. . . ." The May issue of the JOURNAL of the American Dietetic Association reports that Argentina now has a dietetic association which publishes its own journal. Other South American countries have inaugurated nutrition programs and training centers for dietitians. It is also gratifying to learn that in North Africa, Italy, or wherever a number of Army Medical Department dietitians are stationed they gather together regularly to discuss common interests. As of September 1944, there are 965 members of the American Dietetic Association serving with the armed forces of the United States. The Hawaii Dietetic Association is one of our newest affiliated groups.

The problems of the associations of other countries seem to be much the same as ours. In Chili, out of 70 dietitians trained for hospital service, many have been called to other fields. In England, dietitians are struggling with the school lunch problem and with the difficulties of establishing the dietitian in the hospital. Again quoting from the just-mentioned *Newsletter*, "The path of all pioneers is beset with difficulties and this has been apparent in the field of dietetics and the newly fledged scientists were often described as 'food faddists who were poor cooks.' "

Dietitians in the United States have practically conquered this initial period of uncertain acceptance, but there are still a few hospitals that employ dietitians only to meet the standards set up for hospitals by the League of Nursing Education, the American College of Surgeons, the American Medical Association, and the American Hospital Association. The duties of dietitians in such institutions are restricted to teaching student nurses and supervising therapeutic diets. In these situations the hospital superintendent appears to be unmindful of the fact that he has at hand a gold mine which is not being utilized, for he places a chef or steward, untrained in the science of nutrition or institution management, in charge of the food service while the dietitian with her professional talent and five years of training is expected to stand by and accept for her special diet trays only that which the chef or steward chooses to provide. The term "talent" in describing the dietitian is used advisedly, for only food service directors who have liked to cook since childhood are successful.

Very few state institutions caring for the indigent, the mentally ill, the criminal and the delinquent employ dietitians. Poor nutrition may be a contributing factor to the confinement of many of the inmates of these institutions for it cannot be denied that good nutrition is essential to physical and mental development. Proper dietary treatment will contribute to the recovery of the ill, and the rehabilitation of the criminal and delinquent. A dietitian should most certainly be in charge of food service in homes for children. These homes usually care for

[1]Read at the Opening Session of the Annual Meeting, American Dietetic Association, Chicago, October 25, 1944.

children ranging in age from infancy through adolescence and their future depends upon proper dietary care. If it is impracticable to have a full-time dietitian, all menus should be checked by a dietitian or nutritionist.

The school lunch problem, here as in England, is of great importance at this time. A number of bills have been before Congress during the past year but none has received favorable consideration. However, an appropriation of fifty million dollars has been made; thus, support of the school lunch by the Government has not been entirely abandoned. Two members of the American Dietetic Association testified at the hearing before the subcommittee of the Committee on Agriculture and Forestry, United State Senate, on Bills S1820 and S1824.

Members of the American Dietetic Association are interested in a bill that will not only provide funds for food for school lunches, but will carry with it provisions for an educational program in nutrition and proper management of the school lunchroom.

Judged by the number of children showing evidence of malnutrition it would seem that many homes have failed in this respect, and so it becomes the duty of some other agency to see that adequate food and nutrition information are provided. Only after a generation of prospective mothers, who have been taught the principles of nutrition and their application from nursery school to college, have in turn applied these in the home, will there be a succeeding generation of well-nourished children. The subjects of nutrition and food should be incorporated in the curriculum from the time the child enters school, and continued progressively throughout the formative years as are mathematics and other fundamental subjects. Every individual should be as familiar with food composition as he is with the multiplication table if he is to give due attention to his physical well-being. The nutritional needs of the body through the crucial periods of development should be common knowledge, and food composition should be so familiar to everyone that the selection of an adequate daily dietary may be accomplished without conscious effort. If a nursery-school child can be taught that the dragonfly lives on flies and mosquitoes and that its appetite is insatiable, so can he be taught the content of his own dietary and the importance of three good meals each day. The geography teacher, in presenting staple articles of diet in countries being studied, can add to the interest of the subject by discussions of the composition of the foods and by indicating how this knowledge may be practically applied to the diet of the members of the class.

A qualified school lunchroom manager will not only plan meals that contain one third of the daily dietary requirement, but will carry on a nutrition and health education program and enlist the interest of all teachers in correlating the subjects they teach with the program.

At present many dietitians, originally trained for hospital work, are entering other fields which appear more promising. Industrial plants, restaurants, hotels, food and equipment manufacturers, railways, airways and other organizations engaged in group feeding and food sales promotion have recognized the value of employing women trained in applied nutrition who are experienced. More lucrative salaries and shorter hours have lured many dietitians away from the hospital field. This means that hospitals must make adjustments so that the opportunities for dietitians in the hospital may compare more favorably with those in commercial fields.

While the dietitian whose viewpoint is entirely colored by mercenary interest will not be successful, no dietitian should be expected to be wholly disinterested in monetary returns commensurate with work at a skilled professional level. Because of shortage of dietitians during wartime, salaries for hospital dietitians perforce have been increased and it is the responsibility of members of the profession to insist upon maintenance of salary levels in line with those paid other technically trained persons in comparable positions of responsibility demanding administrative skill.

In postwar planning it is not anticipated that there will be an oversupply of dietitians but that there will be considerable relocation. Many experienced food service directors will be called to take part in the United Nations Relief and Rehabilitation Administration program and others to act as technical advisers to government agencies. Hospitals, too, that have never employed a sufficient number of dietitians will ask for more, once they are available, and it will be possible to meet the needs of industrial plants heretofore unable to secure competent dietitians. The great problem before the Association's Placement Bureau will be to see that the right person is assigned to the right place. The continued progress of our profession depends greatly upon this and the maintenance of our standards of training.

The shortage of hospital dietary department personnel during the past few years has led to a greater appreciation of those employees who have remained through all the hardships, and to the realization that this type of work can and should be made more attractive. Salaries have been raised, hours shortened, pension plans are being established, and employee training courses have been quite generally inaugurated. But this is not enough. Our profession should recognize the value of a well-coordinated head and hand, of fitting manual skill to the knowledge needed to do a task well. In other words, we must dignify the work of the dietary department employee so that he will be proud of his position. The Administration Section of the Association is working on this particular problem at present, and programs are being carried on by other organizations for this purpose.

On June 14 of this year a conference of representatives of women's organizations was called in Washington. Two hundred women, representing seventy-five of the oldest and largest organizations of women in the country, met in the East Room of the White House. The purpose of this meeting was to point out the responsibility of women in establishing a lasting peace, and in assembling a livable order out of the fragments of the present state of chaos. Many important international issues and problems arising during and from the war would be dealt with, it was decided, through a series of conferences. Representatives of the various organizations were asked to submit names and qualifications of their members who might be considered as candidates for appointment to policy-making conferences and domestic commissions where they would serve as official delegates of the Government and as technical advisers.

The American Dietetic Association is the only national organization concerned specifically with the problems of applied nutrition. Its members are both academically and practically equipped to apply this science. A roster of qualified members has been compiled for the State Department and it is expected that several will be appointed to responsible positions concerned with one of the greatest problems facing the world today—the proper feeding of our own people and those in other lands.

As women and citizens, as well as dietitians, our members should be interested in all issues and active in all affairs of the community, state, and nation which pertain to health and welfare.

There is a significant trend among members of the medical profession to give greater attention to the science of nutrition. Since the apathy on the part of the public toward general physical fitness has been shaken, many

health and welfare programs are being planned but, unfortunately, without cognizance of the basic value of proper nutrition to health and welfare, and without recognition of the valuable assistance dietitians can render in furthering these programs.

Members of our Association should be in hearty agreement with the "resolutions on giving intelligent instruction in science and biology to the youth of America" presented at the recent meeting of the American Medical Association, and should offer their assistance in promoting this program.

It is hoped that the National Physical Fitness Program now being introduced will be far-reaching. But we anticipate that it will be some time before the vital importance of a continuous and expanding program to assure our national health will be universally realized. The quest for good health must be a people's movement, stimulated by a basic and intelligent demand for an understanding of principles which are rooted in science rather than tradition.

The American Dietetic Association is rather unique in the world of professional organizations with regard to its close relationship with other groups. Our interests overlap those of the physician, dentist, chemist, agriculturist, educator, food technologist, economist, and distributor. During our short meeting, problems affecting all angles of applied nutrition will be considered and distinguished speakers from allied fields have been invited to present ideas, aims, and plans appropriate to the present and the future.

At special sessions of this convention, interests of direct concern to the four sections of the Association will be considered. Outstanding tasks face us at this time. It is expected that out of these conferences will come concrete plans for improvement in all fields of applied nutrition and for the continued growth and progress of our organization. It is hoped, too, that this meeting will effect closer cooperation among dietitians, nutritionists, and other allied workers to the end that nutrition education programs of the future will truly create a desire for sound information and the will to use it.

A Menu and Nutrition Service for Industry

An unusual service to those responsible for company-operated employee cafeterias in industrial plants was inaugurated with the distribution August 28 of the first issue of *Weekly Menu and Nutrition Service*, prepared under the direction of, and copyrighted by, Quindara Oliver Dodge in her capacity as chairman, Subcommittee on Industrial Nutrition, Massachusetts Committee on Public Safety. The service is being made available by the Associated Industries of Massachusetts, with the cooperation of the above-mentioned committee, the Massachusetts Division of Occupational Hygiene of the Massachusetts Department of Labor and Industries, and the Women's Educational and Industrial Union. Mrs. Dodge states that:

"This new service is designed to aid managers of company-operated plant cafeterias by providing carefully planned menus with suggested meal combinations that are nutritionally adequate, observe ration allotments, and meet a practical raw food cost percentage of 55 to 60 per cent. This service also facilitates using the cafeteria as an effective tool in a sound nutrition education program to be promoted by a plant-elected management-worker committee."

If the first issue of *Weekly Menu and Nutrition Service* is a foretaste of subsequent issues, the managers of Massachusetts industrial cafeterias, whether or not they be dietitians, as well as their employers, and the workers themselves, may consider themselves fortunate. For this manual really shows promise of accomplishing its purpose. Its plan of organization and the method used in presenting the necessary information are entirely practical and reflect the viewpoint that only results count and that vague suggestions and sketchy presentation of facts and information are seldom applied and of little value if they are not followed up with something more immediately useful.

The nucleus of this weekly manual is a set of "Sales Menus," including for each day a "hearty luncheon special," a light luncheon, a salad luncheon, and à la carte items. The hearty luncheon provides one third of the recommended daily allowances for a moderately active man. A summary of rationed food allowances and raw food cost percentages for this luncheon, based on 100 portions, is included. Standardized quantity recipes for the luncheon specials and other items are given. Following the menus is a table of dietary calculations for the hearty luncheon specials for the week. Another table lists sizes of service portions used in standardizing quantity recipes and calculating nutritional adequacy of the hearty luncheons, with amounts given in both weight and volume for individuals and for 100 servings. A final table, "Production Table for the Week," lists for each day all the items on the luncheon menus, classified according to types of dishes—juice or soup, meat, meat extender or alternate, potato, vegetable, etc., etc. A separate division in the table is devoted to box lunch items.

In addition to the above, two pages in the manual are given over to information on the current market situation in the state, the latest rationing regulations, etc., complete with the names, addresses, and telephone numbers of various official representatives whom a food service director might have occasion to call upon for information or advice. A final page in this first issue gives directions for the use of the service.

More explicit details concerning the purpose and development of the service are included in an article by Mrs. Dodge in the August issue of *Industry*, published by the Associated Industries of Massachusetts, in which it is stated that the service now offered is the result of many months of study and research. Accompanying the article are photographs taken in the bakery of the Massachusetts General Hospital and the experimental food laboratory of Simmons College, where dietitians are shown developing and testing standard recipes.

HIGH-PROTEIN DIETS[1]

DORIS JOHNSON, M.S.
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The high-protein diet has assumed considerable importance in the last few years. A high-protein diet should furnish between 100 and 150 gm. of good protein per day, approximately 50 per cent of which should be obtained from "complete" protein foods such as eggs, milk, cheese, fish and meat—those which supply the essential amino acids in amounts sufficiently high to meet body requirements.

It is not necessary to overemphasize the use of large quantities of meat in a high-protein diet. If we compare equal amounts (100 gm.) of protein, supplied by meat and milk (1), it is found that milk meets the optimal daily requirement for all the essential amino acids by more than 100 per cent while meat meets the tyrosine and valine requirements by less than 100 per cent. Since dairy products are much cheaper than meat, it is well to keep this point in mind. The usual 3 to 4-oz. serving of meat daily is all that is necessary if sufficient eggs and dairy products are included to meet the high-protein requirement. Thus a 3 to 4-oz. serving of meat, 2 oz. cheese, 1 qt. milk and 3 eggs per day will supply more than half of the protein in a diet supplying 150 gm. protein.

The high-protein diet must also be high-caloric, with the greater part of the calories supplied from carbohydrate sources so that the protein of the diet need not be used for energy, but for tissue, hemoglobin, and serum protein regeneration.

A diet such as that described above is not always readily consumed by the severely ill patient and it therefore becomes necessary to use more concentrated sources of protein, such as high-protein milk, made up of 635 gm. milk (whole or skim), 150 gm. dry milk (Dryco) and 300 gm. egg white (2). A glass of this milk contains 20 gm. protein. Dextrose and various flavors may be added, and as much as a quart of high-protein milk a day may be consumed. Other high-protein beverages may be made by adding egg white to various fruit juices, or by combining protein hydrolysates, such as aminoids and amigen in 10 per cent solution, with milk or with fruit or tomato juice. Protein hydrolysates are, of course, also used for intravenous administration when the patient is unable to take food by mouth.

CONDITIONS REQUIRING HIGH-PROTEIN DIETS

Numerous pathological conditions require high-protein diets in therapy. For example, the increased metabolic rate in hyperthyroidism necessitates added protein. In chronic conditions such as hepatic disorders, nephritis and nephroses, there is a hypoproteinemia due to impairment of function of some organ of the body. Severe hemorrhage and burns, with an accompanying loss of plasma and/or red blood cells, also bring about a hypoproteinemia. Inadequate dietary intake of protein foods or impairment of absorption of amino acids occurs in intestinal obstruction or diarrheas. Postoperatively, a hypoproteinemia sometimes results which is amenable to high-protein therapy. In celiac disease, sprue, and related conditions, protein is of considerable importance in therapy. Of most recent interest is the importance of high-protein intake as an adjunct to penicillin therapy.

To describe these conditions and the necessary diet therapy in detail, let us first consider hyperthyroidism. Here the greatly accelerated metabolism requires not only an increased protein intake but a total intake of 4000 to 5000 calories per day, with the protein intake at 2 gm. per kilogram of ideal body weight.

In hepatic disorders, such as cirrhosis of the liver, the accompanying hypoproteinemia is due to liver impairment and the resultant inability to regenerate serum proteins, particularly the albumin fraction (3). Many patients with cirrhosis of the liver are in a malnourished condition because of a poor dietary intake. Ascites often occurs when the albumin fraction of the serum protein, which contributes about 85 per cent of the colloidal osmotic pressure of the blood, is reduced. Paracentesis thus results in appreciably further loss of protein to the body. High-protein, high-vitamin, high-caloric, and often low-fat diets are used in therapy, in which the protein will range from 110 to 140 gm. per day. Large doses of brewers' yeast and liver extract supplement the diet. Such a diet makes the prognosis of portal cirrhosis more favorable by stimulating regenerative processes of the liver parenchyma. Immediate results are not to be expected, however, and several months will elapse before the serum proteins show much favorable change. The use of protein hydrolysates in treating patients with cirrhosis is advantageous, since the administration of amino acids as such spares the damaged liver, at the same time supplying the necessary amino acids in available form for serum protein regeneration.

In nephritis and nephroses there is a high proteinuria with a depletion of body stores of protein and a resultant hypoproteinemia. This, in turn, is the main cause of edema in these patients. It is of the utmost importance, therefore, to replace this protein which is being lost in the urine, if the prognosis of such cases is to be bettered. Thus a high-protein diet of from 100 to 120 gm. per day is indicated. Protein utilization is normal in nephritic patients, thus the increased protein intake has no harmful effect on the kidneys by requiring undue elimination of metabolic waste products; instead it is used for replacement of the protein lost through the urine. Diets for the treatment of nephritis and nephroses are also usually salt-poor, since the sodium ion is an important factor in the cause of edema. However, if the salt-poor diet is so unpalatable as to be rejected by the patient, it is better to allow him some salt to ensure the high-protein intake.

Severe hemorrhage, burns, and general peritonitis cause an acute hypoproteinemia and it is necessary to bring about restoration of the plasma proteins as rapidly as possible. If the loss of protein is great, diet will not bring about a sufficiently rapid regeneration of plasma protein. It then becomes necessary to administer plasma, blood, or amino acid mixtures parenterally to allay any serious results. This should be followed by a high-protein diet.

In severely burned patients there seems to be an excessive loss of nitrogen into the urine as well as large losses of nitrogen by exudation from the burned surfaces; there is also an increased demand for protein for tissue building. In fact, there is a direct relationship between the extent and severity of the burn and the amount of nitrogen lost. If this loss is not corrected, edema and malnutrition, as well as poor healing of the wounds and skin grafts, result. For very severely burned patients it will be necessary to use forced feeding by tube, and intravenous amino acid administration. Taylor *et al.* (4) report a case in which a patient with 50 per cent of the

[1] Presented before the New York State Dietetic Association, New York, May 26, 1944.

body surface burned, required 500 gm. protein per day before healing occurred.

Nutritional edema or "war edema" has been shown to be due to insufficient intake of dietary protein or to interference with the assimilation of proteins due to gastro-intestinal disorders which result in a hypoproteinemia. Not only is the blood protein depleted but that in the tissues as well. If the inadequate intake is entirely of dietary origin, due to poor eating habits or economic factors, the method of treatment is obvious. The dietitian and the social worker have a real problem here; if the malnutrition is secondary to some other factor, the latter must first be corrected and a high-protein diet then instituted.

The condition known as postoperative hypoproteinemia is of considerable interest and importance at present (5-7). Protein synthesis occurs at the site of a healing wound; it is important, therefore, that the necessary amino acids be supplied to allow for this tissue regeneration. The negative nitrogen balance which often occurs after abdominal surgery can be due to the fact that the patient, preoperatively, was already hypoproteinemic, and/or the liver's functional capacity has been impaired, and also due to the fact that food cannot always be taken for some time postoperatively. It has been reported that when a group of patients were fed large amounts of protein preoperatively (7), they did not have the usual postoperative hypoproteinemia, because of alteration of the plasma volume and because the amount of circulating protein lost postoperatively was about equal to that made preoperatively. Furthermore, it has been observed that skin grafting will not proceed satisfactorily in a patient who is hypoproteinemic.

Penicillin therapy in certain infections is becoming more and more widely used (8). It has been observed that the majority of patients subjected to penicillin therapy are in a more or less malnourished condition due to the infection and other factors. It is essential that these patients be in positive nitrogen balance. Penicillin therapy in itself does not ensure positive nitrogen balance, but it does control infection, and an improved appetite, along with a positive nitrogen balance, results. It has been noted, furthermore, that in these infections effective restoration of tissue and blood protein does not result from positive nitrogen balance alone, but only when penicillin is given to control the infection. The protein intake during penicillin therapy should be from 130 to 150 gm. per day, and fluid intake sharply restricted, since penicillin is rapidly excreted in the urine.

Extremely high protein diets are used in celiac disease, sprue, and related conditions in which there is an intolerance to fats and sometimes to carbohydrates. Protein is especially well tolerated in these conditions and also in children with celiac disease. In the latter instance, the protein intake will range from 9 to 12 gm. per kilogram of ideal body weight, and the diet should be as nearly fat-free as possible and relatively low in carbohydrate. This can be accomplished by using high-protein banana powder beverages or the high-protein milk formulae as adjuncts to the high-protein diet.

SUMMARY

In summary, then, I should like to emphasize the following:

1. High-protein diets must contain all the essentials of good nutrition before the protein can be utilized effectively.
2. Milk and eggs, being superior sources of protein, should be emphasized. It is not necessary to give unduly large amounts of meat.
3. Whenever the patient is unable to consume large quantities of solid food, concentrated protein beverages may be used.
4. High-protein diets, that is, over 100 gm. per day, are indicated whenever hypoproteinemia occurs. They are therefore usually employed in hyperthyroidism, cirrhosis of the liver, nephritis, nephroses, severe hemorrhage, burns, nutritional edema, celiac disease, postoperatively and during penicillin therapy.

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Protein Hydrolysates. Intravenous alimentation with protein hydrolysates is a practice based on sound physiological principles. Amino acids are the units which the body manipulates in covering its nitrogen needs and there can be no great objection to introducing the required amino acids directly into the blood stream as an alternative to the normal process of *in vivo* digestion of intact proteins to amino acids and the transfer of these through the wall of the alimentary canal into the blood stream. The amino acids of an intravenously injected protein digest are almost completely mobilised for use by the living organism. Unless the injection rate is extremely rapid only a small amount of the digest is spilled over into the urine. . . . The administration of amino acids by vein makes them available for use more readily than does the administration of either the digest or the intact protein by mouth. . . .

Mixtures of pure amino acids can be used intravenously instead of protein digests to meet the body's nitrogen requirements. . . . By eliminating the processes of digestion and absorption, intravenous injection of protein hydrolysates offers a physiological method of dealing with the alimentation of human subjects in a wide variety of pathological conditions. The clinical evidence so far obtained has shown that the intravenous administration of such materials can be helpful when oral feeding is impossible, difficult or ineffective. In the conditions obtaining after surgical procedures, hemorrhage and burns, in which the demand for protein is greater than normal, the digests can be used effectively either alone or as supplements to the proteins of orally ingested food. In the initial treatment of shock from hemorrhage and burns, protein hydrolysates may not be as effective as plasma . . . presumably because they have no stable osmotic effects. In providing for tissue regeneration in these conditions they are, however, more suitable than plasma since the amino acids of the latter have to be freed from their existing combinations for reshuffling into the order characteristic of the particular protein it is necessary to renew.—*From a monograph on the subject by W. E. Gaunt, Nutrition Abstr. & Rev. 13: 501, 1944, reprints of which are available at 1 s. each on application to the Rowett Institute, Bucksburn, Aberdeen, Scotland.*

THE ASCORBIC ACID CONTENT OF FRESHLY PREPARED AND OF STORED ORANGE MARMALADE[1]

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AS EARLY as 1921 Delf (1) reported a biological study of the vitamin C value of marmalade. The marmalade had slight but definite antiscorbutic potency when fed to monkeys: about one tenth that of fresh juice. Bacharach, Cook and Smith (2) found that the peel was high in ascorbic acid and concluded that the ascorbic acid value of marmalade is derived to an appreciable extent from the peel; their examination of 11 commercial brands showed those with the higher peel content to have the higher ascorbic acid values. These investigators also tested one sample of home-cooked marmalade submitted to a lengthy boiling process in an open kettle and stored for one year. This sample gave less than 0.01 mg. ascorbic acid per gram as compared with the range of 0.06 to 14 mg. for the commercially-prepared marmalades. The authors stated that marmalade and potatoes probably served as the chief sources of ascorbic acid in many English homes. Consequently, the ascorbic acid value of the marmalade is especially important.

The purpose of the present study was to determine the ascorbic acid value of homemade orange marmalades immediately after preparation, after 15 days, and after 6 months' storage at room temperature, and to compare these values with those for other marmalades of unknown composition and storage time.

EXPERIMENTAL PROCEDURE

The fruit used was obtained from the local market during June 1943. The oranges were Premium Brand Valencias from Eadinton Fruit Company, Fullerton, California; the lemons were Sunkist from Sunkist Pacific Made, Montalvo, California. Sufficient fruit to prepare all the marmalades was purchased at one time and stored in an electric refrigerator.

A study of orange marmalade recipes showed considerable variation:

Cooking Procedure. The following cooking procedures were noted: Fruit cooked immediately after preparation without pectin. Fruit cooked immediately with added pectin. Fruit soaked 24 hr. in water, then cooked. Fruit soaked 24 hr. in water, sugar added and mixture stirred until sugar dissolved, then allowed to stand another 24 hr. before cooking.

Preparation of Fruit. Fruit thinly sliced. Peel removed and boiled separately before adding to pulp. Fruit, peel, and pulp ground.

Proportion of Sugar. One pound sugar to 1 lb. fruit, up to two times as much sugar as fruit. The proportion of 1 lb. sugar to 1 lb. fruit was most frequently noted.

Proportion of Water. Three pints water to each pound fruit, up to 1 qt. per pound. The former amount was used to obtain a jellied consistency.

Proportion of Fruits Used. The oranges were used with and without added lemon juice. Lemons were added in the following proportions: 1 lemon to 1 orange, 1 lemon to 2 oranges, 1 lemon to 3 oranges, 1 lemon to 4 oranges.

Quantity Obtained From Recipes. Yield varied greatly.

Use of Commercial Pectins. The directions for each brand were followed.

Five marmalades were prepared during July and August 1943, as follows:

Method 1. One lemon to 2 oranges sliced and divided into 4 equal parts: (a) cooked immediately, (b) cooked immediately with added lemon juice, (c) cooked after standing 24 hr., (d) sugar added after 24 hr., the mixture stirred until sugar dissolved, and cooked after standing 48 hr.

Method 2. Like Method 1 (a) but fruit ground and cooked immediately.

Method 3. One lemon to 3 oranges divided and cooked as in Method 1.

Method 4. One lemon to 4 oranges divided and cooked as in Method 1.

Method 5. One lemon to 4 oranges, using $\frac{3}{4}$ lb. sugar to 1 lb. fruit. Cooked as in Method 1 (a).

All of the marmalades with the exception of Method 5 were made with 1 lb. sugar to 1 lb. fruit. Sedky, Fellers, and Esselen (3) used a proportion of 25 per cent dextrose to 75 per cent sugar because it produced a less sweet taste and enhanced the flavor. This same proportion of dextrose was used in the present study, with the additional purpose of conserving now-rationed sugar. Therefore, $\frac{3}{4}$ lb. sucrose and $\frac{1}{4}$ lb. dextrose[2] were used in all of the recipes except the last which was made with a total of $\frac{3}{4}$ lb. sugar to 1 lb. fruit; that is, $\frac{9}{16}$ lb. sucrose and $\frac{3}{16}$ lb. dextrose. Three pints water to each pound fruit was used in all recipes. The amount of each fruit used in preparing the five recipes was calculated to yield from 6 to 8 glasses (8-oz.) for each cooked portion. That is, marmalades prepared according to methods 1, 2, and 4 consisted of sufficient fruit to give 6 to 8 glasses for each of the four equal parts, while those prepared according to methods 3 and 5 involved just enough fruit for one of these portions, namely, 1(a). The peel content of each of the portions, therefore, was practically identical since the same amount of fruit was used for each part, the only difference being the proportion of orange to lemon peel.

All the uncooked marmalade mixtures kept for 24 to 48 hr. were stored in an electric refrigerator. The same stainless steel knife, kettle, and gas burner were used. All portions of each marmalade were cooked to 108°C.

Four commercial pectins, one a liquid, the others powders, were used in preparing the marmalades with added pectin. The ingredients according to descriptions on the packages were:

1P. A solution of highly concentrated fruit pectin and lactic acid.
2P. Powder containing dextrose, fruit pectin, and tartaric acid.
3P. Powder containing refined corn sugar, apple pectin, citric acid.
4P. Powder containing mixture of fruit pectin, citric acid, and Cerelose (pure dextrose).

When lemon juice was added it consisted of $3\frac{1}{2}$ tbsp., added after 20 min. cooking or at approximately 107°C.

Six prepared marmalades obtained from various sources, 2 commercial and 4 homemade, were tested for ascorbic acid also, for comparison with those in the present study.

Bessey and King's (4) method of determining ascorbic acid was used. All analyses were made in triplicate on the fruit mix before cooking and immediately after cooking, as well as after 15 days' and 6 months' storage, respectively. A blank was run on all reagents used, and the final ascorbic acid values were calculated with this correction. Only the averages of the 3 samples are reported.

[1] Data on freshly prepared marmalades were presented in partial fulfilment of the requirements for the master's degree. Received for publication May 8, 1944.

[2] Furnished through the courtesy of the Corn Products Company, New York.

DISCUSSION OF RESULTS

Ascorbic acid determinations were made on the sliced fruit and water mixture before cooking and again on the cooked marmalade for each of the proportions and methods used (Table 1). The length of time required for cooling the cooked marmalade varied greatly; each marmalade was allowed to stand 24 hr. before testing for ascorbic acid. The ascorbic acid values reported in the columns headed "1 day" in Table 1 are therefore for marmalades 24 hr. old.

The ascorbic acid values of the orange, lemon, and sugar mixtures before cooking varied from 13.3 to 37.56 mg. per 100 gm. The former value was obtained when the oranges and lemons were ground. The range for the sliced fruits alone was 10 mg. (27.8 to 37.56 mg. per 100 gm.). The ratio of oranges to lemons may account for this difference since one of the lowest values was obtained on the basis of 1 lemon and 2 oranges; the highest value, 1 lemon to 4 oranges. However, since all the fruit was purchased at one time and stored in the refrigerator there is no apparent reason why the second preparation of marmalade, using the proportion of 1 lemon to 4 oranges, should have given a value very similar to that of the 1 lemon and 2 oranges (the first series of values in Table 1). Consequently, it seems safe to assume that the differences in ascorbic acid content of the uncooked sliced fruit mixture are due to variation in individual fruits, as well as to the method of sampling. It was very difficult to obtain uniform samples since the fruit tended to settle to the bottom of the pan. The sampling was considered satisfactory, however, when the 3 samples checked within plus or minus 10 per cent.

All of the marmalades showed destruction of ascorbic acid during cooking. In general, greater amounts of ascorbic acid (19 to 54 per cent) were retained when the fruit was cooked immediately and not allowed to stand in water, whereas when the ingredients were held 24 and 48 hr., ascorbic acid retentions varied little (17 to 21, and 16 to 20 per cent, respectively).

When the marmalades were stored for 15 days and again tested for ascorbic acid, the values, irrespective of the proportions and cooking processes used, were very similar, 10 to 24 per cent of the ascorbic acid in the marmalade. The one exception was the marmalade prepared with the least amount of sugar, which showed almost no change after 15 days' storage (3 per cent).

The total destruction of ascorbic acid as the result of cooking plus storage was very similar for all marmalades after 180 days or 6 months' storage. The 8-oz. jars of marmalade were stored in corrugated paper boxes at room temperature until analyzed. Only 1 to 3 per cent of the ascorbic acid originally present in the freshly prepared, uncooked mixture remained at the end of 6 months' storage at room temperature.

Although Griebel and Hess (5) reported that sugar served to protect the ascorbic acid, it was not evident from this study since the marmalade with 1 lemon to 4 oranges was prepared both with 1 lb. sugar to 1 lb. fruit and with ¾ lb. sugar to 1 lb. fruit. As stated above, that prepared with less sugar retained more ascorbic acid than the former; it retained the same percentage of ascorbic acid (1 per cent) as the marmalade made with 1 lemon to 3 oranges and the larger amount of sugar.

Bacharach, Cook and Smith (2) reported that three samples of home-prepared marmalade gave a negative response to the ascorbic acid test after one year of storage. Other samples tested by these same authors gave values ranging from 6 to 14 mg. per 100 gm. marmalade. None of the marmalades reported in the present study gave as high values as these after 6 months' storage.

Ascorbic acid values of marmalades prepared with four commercial pectins, according to the recipes accompanying these products, are reported in Table 2. The percentage of the original ascorbic acid retained after 1 and 15 days' storage is less for all of the marmalades made with commercial pectins, but after 6 months' storage it is the same as the least retained by ordinary home methods (1 per cent). However, the actual ascorbic acid values are higher for marmalade made with 4P, one of the powdered pectins, and 1P, a liquid pectin, than for all of the other marmalades except that made with the least amount of sugar. These higher values can be partially explained on the basis of a shorter cooking period due to the use of the commercial pectin. Cooking time does not, however, explain the high values for the marmalade prepared with the smaller amount of sugar since it required a longer period of cooking to reach the jellied stage. The highest ascorbic acid value ob-

TABLE 1

Ascorbic acid content of orange marmalade

PROPORTION OF FRUIT	MG. ASCORBIC ACID PER 100 GM. MARMALADE														
	Prepared first day							Prepared after 24 hr.				Prepared after 48 hr.			
	Without added lemon juice				With added lemon juice										
	Uncooked	1 day	15 days	180 days (6 mo.)	1 day	15 days	180 days (6 mo.)	Uncooked	1 day	15 days	180 days (6 mo.)	Uncooked	1 day	15 days	180 days (6 mo.)
1 lemon, 2 oranges	27.87	5.69 (20%)	4.26 (15%)	0.92 (2%)	7.13 (26%)	4.40 (16%)	0.70 (3%)	17.13 (62%)	4.69 (17%)	3.54 (13%)	0.62 (3%)	8.42 (30%)	4.42 (16%)	3.35 (12%)	0.63 (3%)
1 lemon, 3 oranges*	13.30	7.20 (54%)	3.17 (24%)	0.45 (3%)											
1 lemon, 3 oranges	35.90	6.86 (19%)	3.58 (10%)	0.45 (1%)	10.27 (29%)	6.22 (17%)	0.78 (2%)	28.85 (79%)	6.24 (17%)	5.17 (14%)	0.68 (2%)	10.37 (29%)	5.86 (16%)	5.44 (15%)	0.69 (2%)
1 lemon, 4 oranges	37.56	9.30 (24%)	6.59 (17%)	0.67 (2%)	10.41 (28%)	8.16 (22%)	0.67 (2%)	17.6 (47%)	8.02 (21%)	5.02 (13%)	0.56 (2%)	8.70 (23%)	7.43 (20%)	5.47 (15%)	0.58 (2%)
1 lemon, 4 oranges†	27.82	13.65 (49%)	12.90 (46%)	0.39 (1%)											

* The fruit was ground instead of sliced and cooked on the day prepared.
† Using ¾ lb. sugar to 1 lb. fruit and water, and cooked on the day prepared.

tained with a commercial pectin was 18.8 mg. per 100 gm. marmalade.

Samples of two commercial and three homemade marmalades were tested for comparison with the freshly prepared marmalades, results of which are given in Table 3. The range of 1.05 to 7.27 mg. per 100 gm. is very similar to the 2.6 to 6.3 mg. reported by others (3). The homemade marmalades were known to have been prepared from winter fruit, although the proportions of fruit, sugar, pectin, and orange were not known. All the values exceeded those obtained in the present study on products stored 6 months. One jar of homemade kumquat marmalade tested at 4.53 mg. per 100 gm.

Judged by the just-mentioned analyses, it is possible to prepare marmalades which retain a greater amount of the original ascorbic acid than did those in the present study. The seasonability of the fruit, the sampling, preparation for cooking, proportion of water and sugar, cooking time, and conditions of storage are variables which could account for the differences reported. A good "home" method of preparing citrus marmalade should be developed for use when there is a surplus of the fruit, one which will retain a maximum amount of the original ascorbic acid content of the fruit.

TABLE 2

Ascorbic acid content of orange marmalade made with commercial fruit pectins

COMMERCIAL FRUIT PECTINS USED	MG. ASCORBIC ACID PER 100 GM. MARMALADE				
	Uncooked		Cooked		
	Rind	Pulp	1 day	15 days	6 months
1P*	216.4	30.40	12.2 (9%)	12.2 (9%)	1.8 (1%)
2P	116.0	27.3	9.6 (7%)	9.4 (7%)	0.7 (1%)
3P	147.5	39.2	7.5 (4%)	7.3 (4%)	0.7 (1%)
4P	122.2	30.0	18.8 (13%)	18.5 (13%)	2.7 (2%)

* Liquid fruit pectin; the others used were powdered pectins.

TABLE 3

Ascorbic acid content of random samples of commercial and homemade marmalades

SAMPLE	TYPE OF MARMALADE	ASCORBIC ACID
		mg./100 gm.
1	Commercial Orange	1.05
2	Commercial Orange	7.27
3	Homemade Orange	9.97
4	Homemade Orange	4.28
5	Homemade Orange	3.80
6	Homemade Kumquat	4.53

SUMMARY

All of the marmalades made according to currently accepted recipes showed destruction of ascorbic acid due to cooking, ranging from 46 to 84 per cent. The destruction of ascorbic acid after standing 48 hr. before cooking was no greater than that which occurred after standing 24 hr.

Only slight losses of ascorbic acid followed 15 days' storage of the cooked marmalades at room temperature. However, a loss of 97 to 99 per cent was observed after storage at room temperature for 180 days (6 months).

All of the marmalades made with added commercial pectins showed greater losses of ascorbic acid than those without added pectin, although the actual ascorbic acid value was higher for the marmalades made with added pectin. Losses in the marmalades made with commercial pectin as the result of storage were similar to those in marmalades made without added pectin. Use of a dry commercial pectin resulted in a marmalade superior to all others; namely, 18.8 mg. per 100 gm. marmalade.

The two commercial and three home-prepared marmalades chosen at random for comparison with those prepared in this study gave ascorbic acid values similar to those reported by other investigators. All values were higher than for marmalades in the present study after 6 months' storage.

A study of recipes for orange marmalades suggests that more work is needed to develop a home recipe which will result in an orange marmalade with a reasonably high ascorbic acid content.

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Vegetable Shortenings

The digestibility of the proprietary vegetable shortenings and the margarines compares favorably with the digestibility of butter fat. The opinion formerly prevailed that the ease of absorption of a fat depended on its melting point, the higher the melting point the less well absorbed. This is now considered to be untrue. The digestibility appears to depend more on the degree of unsaturation of the fatty acids and the shortness of the carbon chains of these acids.

Shortenings and margarines have melting points of about 115 and 95°F. respectively and are made of various proportions of hydrogenated and unhydrogenated vegetable fats. Feeding studies on animals show that their nutritional value is essentially the same as that of the animal butter fat. They also appear to fulfil growth requirements equally well. In a study on human beings, several highly hydrogenated vegetable oils with melting points above 120°F. gave digestibility coefficients averaging 90.0 as compared to 97.8 for butter. The ordinary commercial products are not as completely hydrogenated as the fats used in this work.

The processsed vegetable oils contain no vitamin A. In the case of margarine, most brands now have 9000 units vitamin A added per pound. Average butter contains 12,000 units per pound, with a somewhat higher value found in summer butter.—*Queries and Minor Notes, J.A.M.A. 125: 460, 1944.*

FOOD INTAKE OF COLLEGE WOMEN: PROTEIN, CALCIUM, PHOSPHORUS, AND IRON[1]

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A PREVIOUS paper (this JOURNAL for September 1944) detailed the caloric intake and energy requirement of college women, based on one-week records of 203 members of advanced classes in nutrition. This study is concerned with the protein, calcium, phosphorus, and iron intakes of the same subjects observed in the previous study.

Protein Intake. The mean protein intake was found to be 64.6 gm. per day (Table 1); the smallest intake 39.6 gm., and the largest 91.0 gm. The means for the various school terms and groups (Table 2), as indicated by an analysis of variance, based on Snedecor's methods (1), did not differ significantly from one another.

TABLE 1

Frequency distribution of the protein intake of 203 college women

INTAKE	FREQUENCY
gm.	
39.6–43.7*	3
43.8–49.9	14
50.0–56.2	22
56.3–62.4	41
62.5–68.7	52
68.8–74.9	42
75.0–81.2	21
81.2–87.4	7
87.5–91.0	1

Mean = 64.60 gm.
Standard error = 0.687
Coefficient of variation = 15.1%
* The class intervals correspond to 1 gm. nitrogen.

TABLE 2

Mean values for caloric intake, protein, calcium, phosphorus, and iron divided according to terms and groups

DESIGNATION	NO. OF WOMEN	CALORIES	PROTEIN	CALCIUM	PHOSPHORUS	IRON
			gm.	gm.	gm.	mg.
Terms						
Spring 1941	56	2060.4	65.46	.8388	1.1732	10.459
Summer 1941	15	2048.9	67.43	.8515	1.1968	9.984
Fall 1941	62	2004.0	62.32	.7705	1.1117	10.076
Spring 1942	48	2036.3	66.13	.8734	1.2298	10.657
Summer 1942	22	1869.2	63.55	.8551	1.1894	10.280
Totals	203	2015.9	64.60	.8288	1.1713	10.335
Groups						
Residence halls	77	2089.4	66.09	.8723	1.2227	10.498
Sororities	20	1987.2	61.54	.7118	1.0666	9.906
Homes	67	1937.8	64.12	.8222	1.1593	10.401
Light housekeeping	24	1939.3	63.05	.7930	1.1265	10.255
Miscellaneous	15	2148.4	65.65	.8490	1.1725	9.893

The average intake in terms of grams per kilogram was 1.112 (Table 3) for the 132 women whose weights were recorded; the smallest intake 0.63 gm., the greatest 1.82 gm.

The average protein intake in terms of the percentage of total calories was 12.92 (Table 4). The range was 9.7 to 16.9 per cent with the exception of one very high figure, 21.17 per cent.

Calcium Intake. The mean calcium intake was 0.8288 gm. (Tab e 5). The range was quite wide, from 0.350 to 1.551 gm. The means for the various terms and groups, as recorded in Table 2, did not differ significantly from one another.

TABLE 3

Frequency distribution of the protein intake of 132 college women in terms of body weight

INTAKE	FREQUENCY
gm./kg.	
0.63– .69	3
0.70– .79	6
0.80– .89	10
0.90– .99	20
1.00–1.09	26
1.10–1.19	24
1.20–1.29	15
1.30–1.39	17
1.40–1.49	5
1.50–1.59	1
1.60–1.69	3
1.70–1.79	1
1.80–1.82	1

Mean = 1.112 gm./kg.
No. below 1 gm. = 39
Percentage below 1 gm. = 29.5

TABLE 4

Frequency distribution of the protein intake of 203 college women in terms of percentage of total calories

	FREQUENCY
%	
9.7– 9.9	3
10.0–10.9	16
11.0–11.9	34
12.0–12.9	46
13.0–13.9	59
14.0–14.9	30
15.0–15.9	12
16.0–16.9	2
21.0–21.7	1

Mean = 12.92%
No. below 10% = 3
Percentage below 10% = 1.5

TABLE 5

Frequency distribution of the calcium intake of 203 college women

INTAKE	FREQUENCY
gm.	
0.350–0.399	7
0.400–0.499	9
0.500–0.599	12
0.600–0.699	38
0.700–0.799	34
0.800–0.899	25
0.900–0.999	30
1.000–1.099	21
1.100–1.199	14
1.200–1.299	7
1.300–1.399	3
1.400–1.499	2
1.500–1.551	1

Mean = 0.8288 gm.
Standard error = 0.01651
Coefficient of variation = 28.3%

Phosphorus Intake. The mean phosphorus intake was 1.1713 gm. (Table 6). The least value was 0.660 gm., the highest 1.757 gm. The means for the terms (Table 2)

[1] Received for publication July 24, 1943. Dr. Greenwood is now a member of the faculty of the School of Home Economics, University of Connecticut, Storrs.

did not differ significantly from one another. However, the means for the groups did show significant differences. The sorority groups consumed the smallest amount; the residence hall, the largest. These same groups consumed the smallest and largest amounts of calcium (in fact, the order of the groups for the two substances is identical) but the variation within the groups was so great for calcium that the means themselves could not be considered significantly different (Table 2).

Iron Intake. The mean intake for iron was 10.335 mg. (Table 7); the smallest intake 5.81 mg., the largest 16.36 mg. Only one intake, however, was in excess of 15 mg. The means for the terms and the groups (Table 2) did not differ significantly.

TABLE 6

Frequency distribution of the phosphorus intake of 203 college women

INTAKE	FREQUENCY
gm.	
0.660–0.699	4
0.700–0.799	8
0.800–0.899	12
0.900–0.999	23
1.000–1.099	31
1.100–1.199	32
1.200–1.299	36
1.300–1.399	24
1.400–1.499	20
1.500–1.599	4
1.600–1.699	5
1.700–1.757	4

Mean = 1.1713 gm.
Standard error = 0.01603
Coefficient of variation = 19.4%

TABLE 7

Frequency distribution of the iron intake of 203 college women

INTAKE	FREQUENCY
mg.	
5.81– 5.99	1
6.00– 6.99	5
7.00– 7.99	9
8.00– 8.99	24
9.00– 9.99	51
10.00–10.99	43
11.00–11.99	42
12.00–12.99	17
13.00–13.99	8
14.00–14.99	2
15.00–15.99	0
16.00–16.36	1

Mean = 10.335 mg.
Standard error = 0.1171
Coefficient of variation = 16.1%

ADEQUACY OF INTAKES IN COMPARISON WITH EXISTING STANDARDS

Protein. The average protein intake would seem to be adequate. The National Research Council suggests 60 gm. for the average woman weighing 56 kg. Sherman (2) sets the figure at 66.6 gm. for the average man weighing 70 kg. These figures would be equivalent to 63 and 55.6 gm., respectively, for the average weight (58.4 kg.) found in the present study. The intake of 64.6 gm. reported here is in excess of both these amounts. McKay *et al.* (3), in balance studies on 124 college women found an average intake of 54.3 gm. protein (8.69 gm. nitrogen) necessary to establish nitrogen equilibrium. Rose and his co-workers (4, 5) working with young men, found from 7 to 8.08 gm. nitrogen (the equivalent of 43.8 to 50.5 gm. protein) sufficient for equilibrium when a mixture of the 10 amino acids known to be indispensable for animals furnished practically the total amount. Leitch and Duckworth (6) estimate the protein requirement to be 50 gm. They do not state definitely how much the daily intake should be in excess of this but they present evidence "which indicates that an intake considerably above this level may be required for the maintenance of health." The question of the most suitable protein intake, however, has never been entirely settled. Cuthbertson (7), writing on the relation of the quality and quantity of protein to human health and disease, states that "there has been no definite and satisfactory reply to the question, What is the protein optimum?" From a study of the dietaries of various people all over the world he goes on to point out that "man can adjust himself to vastly varying levels of protein intake and the protein may be exclusively animal or vegetable in origin or of any intermediate mixture. No deleterious effects result from either extreme, provided the process of amino acid supplementation is effective and the total intake is adequate." Except for those who are almost wholly carnivorous, however, the percentage of total calories derived from protein generally falls between 10 and 14 per cent.

The average intake in terms of grams per kilogram body weight (Table 3) is slightly in excess of the generally accepted figure of 1 gm. per kg. However, 39 of the 132 women (29.5 per cent) received less than this amount. The percentage figure falls within the above-stated range of 10 to 14 per cent; only 3 (1.5 per cent) of the 203 women deriving less than 10 per cent of their calories from protein.

Calcium. Figures on the calcium requirement are quite variable. Sherman (8) arrived at a figure of 0.45 gm. per day for a 70-kg. man or 0.68 gm. for the standard, allowing for a 50 per cent factor of safety; Leitch (9) suggests 0.55 gm., based solely on studies with women, and that this standard could well be used for adults generally. She states that "there is no adequate information to show what the extra allowance ought to be. It might be less or more than Sherman's 50 per cent and would probably vary with conditions of life and health." Outhouse *et al.* (10) found a still higher figure of 10.7 mg. per kg. which is the equivalent of 0.625 gm. for the average woman (present study) of 58.4 kg. In a study on 124 college women, McKay *et al.* (3) found that an intake of 0.816 gm. was necessary in order that the subjects might maintain equilibrium while eating their customary diets. The National Research Council suggests 0.8 gm.

The average figure (0.8288 gm.) reported in this study is in excess of all the above-mentioned figures though only slightly so for the more recent ones. However, if a round figure of 0.8 gm. be assumed as the standard, then 100 women (49.3 per cent) consumed less than the required amount of calcium. Seven consumed less than 0.4 gm., or one half the suggested requirement.

Phosphorus. Not many figures are available on standards for phosphorus. Sherman (11) suggests a value of 1.32 gm. derived from a requirement figure of 0.88 gm. with an added 50 per cent safety factor. McKay *et al.* (3) indicated that the group of college women studied required an intake of about 1 gm. in order to ensure equilibrium.

The mean figure (1.1713 gm.) reported in the present study is less than that of Sherman but greater than that of McKay *et al.* Only 47 of the women (23.1 per cent) were receiving less than 1 gm., while 146, or 71.9 per cent, were receiving less than 1.3 gm.

Iron. The figure for the iron standard is now commonly set at 12 mg. per day but there is recent evidence to indicate that this figure may not be suitable for women of college age.

In a series of 99 balance studies on 69 college women consuming self-chosen diets, Leverton and Marsh (12) found an average intake of 10.44 mg. per day which allowed for an average storage of 1.37 mg. or more than the 1 mg. per day they suggest as sufficient to make up for menstrual losses if the diet is generous in other nutrients. The average intake (10.335 mg.) in the present study is nearly identical with that given above. Of the women studied by Leverton and Marsh, 77.8 per cent showed intakes of less than 12 mg., while in the present study 175 women (Table 7) or 86.2 per cent consumed less than this. It seems unlikely that such a large percentage of normal women would be consuming amounts of iron so grossly inadequate as the above standard would suggest. The hemoglobin values of these women would also indicate that their iron intakes were adequate.[2]

It is worthy of mention that these figures so closely resemble, in all respects, the intakes reported for other college women throughout the Middle West, particularly in connection with the Cooperative Project.

In general, it might be said that the diets of these college women showed no marked deficiencies so far as the dietary components studied are concerned. The point at which these diets need to be strengthened most would be in the calcium intake, for while the average intake was adequate, about one half of the women were consuming amounts which fell below what would seem to be a suitable standard. The easiest way to increase the calcium intake is by means of increased milk intake, but this might be a questionable procedure if milk were consumed at the expense of other protective foods, particularly those of high iron content.

TABLE 8

Mean values for protein, calcium, phosphorus, and iron intake of college women as reported in the literature

AUTHOR	DATE OF PUBLICATION	SUBJECTS			CAL.	PROTEIN			Ca	P	Fe	METHOD OF STUDY	LENGTH OF PERIOD	PLACE OF STUDY
		No.	Age	Wt.										
				kg.		*gm./day*	*gm./kg.*	*% cal.*	*gm.*	*gm.*	*mg.*			
Coons & Schiefelbusch (13)	1932	18	Coll.	51.9	1990	56	1.1	11	0.93	1.19		Weighed, analyzed	4–7	Oklahoma A. & M. Col.
Hetler (14)	1932	85	19–37	56.8	1700	55	0.97	12.9*				Food records calculated	3–7	Univ. of Illinois
Goddard *et al.* (15) 1st period	1934	89	17–25	57.5	3699	91	1.58*	9.8*	0.51	1.34	13	Inventory calculated	8	Univ. of California, Los Angeles
2nd period	1934	89	17–25	57.5	2501	75	1.30*	12.0*	0.75	1.15	13	Inventory calculated	8	Univ. of California, Los Angeles
Kramer *et al.* (16) Fall	1934	25	Coll.	56.1		62.8	1.12*		1.04	1.39		Analysis of excreta	4	Kansas State Col.
Winter	1934	25	Coll.	57.5		60.7	1.06*		1.11	1.40		Analysis of excreta	4	Kansas State Col.
Mitchell (17) 1932	1935	23	Coll.				1.0		0.86	0.98	14	Weighed, calculated	7	Battle Creek Col.
1933	1935	18	Coll.				0.87		0.76	0.92	10	Weighed, calculated	7	Battle Creek Col.
Wheeler & Malloy (18)	1935	28	Coll.	56.6	2397	70.0	1.24*	11.7*	0.92	1.32	11.8	Inventory calculated		Vassar Col.
Morris & Bowers (19)	1939	100	Coll.	56.1	1805	60.71	1.08*	13.5*	0.717	1.103	8.86	Food records calculated	7	Utah State Col.
Pittman *et al.* (20)	1941	12	17–33	56.3		71*	1.3*		1.08*	1.40*		Weighed, analyzed	7–10	Kansas State Col.
Pittman *et al.* (20)	1941	15	17–23	57.6		61*	1.1*		0.72*	0.85*		Weighed, analyzed	7	Ohio State Col.
Leverton & Marsh (12)	1942	69§	16–27			59.2*			0.84*	1.30*	10.44	Weighed, analyzed	7	Univ. of Nebraska
McKay *et al.* (3)	1942	124	Coll.			63.12			0.941	1.177		Weighed, analyzed	7–10	Univ. of Nebraska, Ohio State Col.
This study	1941 & 1942†	203	Coll.	58.4‡	2016	64.60	1.09‡	12.8*	0.829	1.171	10.34	Food records calculated	7	Kansas and Iowa State Col. Oklahoma A. & M. Col.

* Calculated.
† Data collected.
‡ Based on 132 women.
§ 99 periods.

ADEQUACY OF INTAKES IN COMPARISON WITH FIGURES REPORTED IN THE LITERATURE

The mean intakes of protein, calcium, phosphorus, and iron reported for the present study all compare favorably with those reported by other workers (Table 8).

Some rather interesting interrelationships[3] are suggested in the present study. All the possible, simple correlations (Table 9) are highly significant, varying from 0.5276 to 0.8990. It would seem pertinent to inquire whether similar associations might exist between any two variables independent of the accompanying variation of the other variables. Partial correlation furnishes a measure of such an association. That a very different relationship exists is shown by partial correlations (Table 9). Now only 5 of the 10 coefficients are found to be highly significant,

[2] Unpublished data, Cooperative Research Project, Nutritional Status of College Women, Department of Home Economics Research, Oklahoma A. & M. College.

[3] Since so few differences existed for the various terms and groups, no distinctions were made and the data were treated in their entirety.

1 significant and the remaining 4 nonsignificant. Calcium and phosphorus show the closest association of any of the variables. Close relationships are also indicated for protein and phosphorus, protein and calories, protein and iron; less close, but still highly significant, is that for phosphorus and iron. Calcium and iron show a small but significant negative correlation; that is, in groups having similar intakes of the other components the iron decreases as the calcium increases and vice versa. No correlation between caloric intake and minerals is found to exist.

The completeness of the picture with relation to these variables is indicated by the multiple correlations which follow:

DEPENDENT VARIABLE	MULTIPLE CORRELATION
Calories	0.7678
Protein	0.9008
Calcium	0.9030
Phosphorus	0.9437
Iron	0.7375

TABLE 9

Simple and partial correlations

VARIABLES	CORRELATIONS	
	Simple	Partial
Calories		
Protein	0.7593†	0.3796†
Calcium	0.6073†	0.0180
Phosphorus	0.6916†	0.0544
Iron	0.6090†	0.1297
Protein		
Calcium	0.7511†	−0.0255
Phosphorus	0.8590†	0.4372†
Iron	0.7186†	0.3085†
Calcium		
Phosphorus	0.8990†	0.7569†
Iron	0.5276†	−0.1695**
Phosphorus		
Iron	0.6573†	0.1907†

** Significant.
† Highly significant.

In the case of phosphorus, calcium, and protein, nearly all of the variability can be accounted for in terms of the factors studied here. In fact, the amount of calcium in the diet could be estimated quite accurately from a determination of the phosphorus alone, as indicated by the similarity of the simple (0.8990) and multiple (0.9030) correlations and also by a partial regression coefficient of 0.9833 for phosphorus when calcium is the dependent variable. Phosphorus could be estimated less well from the calcium since it is also dependent on the protein intake. The amounts of calories and iron are influenced in greater measure by substances other than those represented here.

Kramer *et al.* (16) found correlation coefficients for calcium and phosphorus of 0.94 and 0.78 for fall and winter periods, respectively, in the diets of 25 college women. An average of these two figures would be very close to the value reported for this study. They found a correlation of 0.55 and 0.61 for protein and phosphorus for the two periods, which is considerably lower than the figure reported here. They state that no direct correlation could be demonstrated between protein and calcium, a fact which is borne out in the present study when the partial correlations are considered.

Calcium shows much the greatest variability of all the dietary components studied. The coefficients of variation for calories, protein, and iron are all relatively small (16.7, 15.1, and 16.1 per cent, respectively) and quite similar; that for phosphorus slightly higher, 19.4 per cent; while that for calcium is 28.3 per cent. McKay *et al.* (3) found much greater variations (20, 25, and 34 per cent) for nitrogen, phosphorus, and calcium, respectively, though the relative order is the same.

The greater variability of the calcium can be partially explained by the fact that milk supplies such a large percentage of that in the dietary (*see* discussion following). Thus the calcium intake would be tremendously influenced simply by the inclusion or omission of a single item of food. Since the other components are more widely distributed they stand a better chance of being included in the dietary, regardless of individual restrictions or likes and dislikes.

Additional observations of interest might be made. As could be expected, the subject who consumed the smallest percentage (9.7) of calories in the form of protein also consumed the greatest total number of calories (3082); while the one who consumed the highest percentage (21.7) of protein consumed a total of 1105 calories, though not the least recorded. Also, the smallest intake of protein, in grams per kilogram body weight (0.63) was noted for the heaviest subject (82.7 kg.); the greatest intake (1.82), for a lightweight (49.9 kg.) subject. The smallest intakes of both calcium and phosphorus were recorded for another individual subject, again indicating the close relationship which exists between these two substances.

The highest iron intake (16.36 mg.) was recorded for one of the women living at the Home Management House when it was operating at "low cost" and the menus contained relatively large amounts of dried beans, molasses, and whole grain cereals.

Low intakes of calcium were invariably associated with low intakes of milk; high intakes, with large amounts of milk. This same association has been noted in the great majority of dietary studies. Leitch (9) states that in Western European and American diets practically two thirds of the calcium is derived from milk and cheese. However, in the present study excessively high intakes of milk were often associated with low intakes of iron. Leitch (9) lists various dietary components in 100-calorie portions of certain food groups and the N. R. C. recommended allowance. Milk, cheese, refined cereals, sugars, and fats are the only foods listed which supply less iron than the allowance suggests. She points out that there should be little danger of iron deficiency except in the case of women whose requirements are high and in infants and young children whose milk consumption is large. If the milk intake is high, care must be taken to supply foodstuffs which are high in iron or the iron intake will fall abnormally low.

SUMMARY AND CONCLUSIONS

The mean intakes of protein, calcium, phosphorus, and iron for 203 college women living on self-chosen diets were found to be 64.60 gm., 0.8288 gm., 1.1713 gm., and 10.335 mg., respectively. The mean protein intake for 132 of these women in terms of grams per kilogram was 1.112 gm.; in terms of percentage of the total calories, 12.92.

The means for the various school terms showed no significant variations. Of the group means, only the phosphorus was found to vary significantly. The women who lived in sorority houses consumed the smallest amount of phosphorus, those in the dormitories the largest. The protein intake would seem to be adequate. While the mean calcium intake was probably adequate, nearly half of the women consumed less than 0.8 gm. and seven

women less than 0.4 gm. The mean phosphorus intake was less than the 1.32 gm. suggested by Sherman, and more than the 1 gm. found necessary for nitrogen equilibrium by McKay *et al.* The mean iron intake fell considerably below the generally accepted standard of 12 mg. It is suggested that the iron standard probably needs to be lowered.

The calcium intake showed a close positive correlation with phosphorus; the protein with phosphorus, calories and iron; and the phosphorus with iron. A negative partial correlation was found to exist between calcium and iron. Calcium showed the greatest variability of all the components studied.

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Argentina's National Nutrition Institute

The history of the National Nutrition Institute of Argentina is the story of one man's crusade. Dr. Pedro Escudero, of the Faculty of Medical Sciences, began in 1921 to campaign for better nutrition. From his "refectory" or out-patient dining room, grew the National Nutrition Institute. In 1939 the Institute was opened to students from all the Latin-American countries.

The purpose of the Institute is to improve the state of nutrition in Argentina—it was found that families on consistently inadequate diets disappeared in four generations—and to build up the agricultural industries.

In the belief that national morale is dependent on nutrition, the Institute has substituted the "economic concept" for the "biological concept"—that is, the worker should be fed according to his need rather than according to his economic status. The basis for comparing the value of diets is the cost of 1000 "normal calories." ("Normal calories" are derived from foods furnishing a balanced diet.)

The different aspects of the program are handled by the six divisions of the Institute: Teaching, Social Action, Feeding, Research, Education, and Medicine. The chiefs of these divisions comprise the Technical Council which attends to the general problems confronting the Institute.

In the first division is the National School for Dietitians. "Its object is the creation of dietitians. It is a university type of course, considerably superior to similar schools in Europe and America. It covers two years." Entrance requirements are a bachelor's degree, normal school training, or suitable commercial experience. Women only are admitted. In addition to dietitians, nutrition aides and nurses specializing in nutrition are trained. This division also offers a two-year graduate course for physicians specializing in nutrition (*médicos dietólogos*), and teaches nutrition to medical students in their final year.

The social action division is particularly proud of its program for protecting the health of well persons. This "prophylaxis" section does not resemble the health centers of other countries. The background of the human subjects is thoroughly studied, and their well-being guarded from infancy to old age. Indiscriminate free feeding is frowned on. When aid is given, the condition of the family is exhaustively studied, and help is furnished so as to balance expense with income. At the same time the family is taught how to prepare and use the food supplied. The mothers' milk center, called the *Ginegaladosia*, offers free milk during the first month of an infant's life.

The feeding division maintains free dining rooms for outpatients, the mothers' milk center, and school lunchrooms.

In the research division there are six sections, including scientific laboratories and a proposed experimental farm.

The education division conducts radio programs, columns in rural papers, conferences with teachers, demonstrations in factory centers and tenement districts, and offers short courses for women's groups.

The sixth division—medicine—maintains a small hospital (60 beds) and serves a large outpatient group, on the theory that 80% of the patients do not need hospitalization.—*From an article by Dr. Pedro R. Landabure in Revista Argentino—Norteamericana de Ciencias Medicas, translated by Mrs. Margaret Shutswell Price.*

FOOD PATTERNS OF SOME EUROPEAN COUNTRIES: BACKGROUND FOR STUDY PROGRAMS AND GUIDANCE OF RELIEF WORKERS[1]

HELEN S. MITCHELL AND NATALIE F. JOFFE

THIS article attempts to give a brief schematic picture of the food habits of thirteen European countries. For each country the information is presented in two parts: the first classifies the foods eaten according to the "basic 7" food groups; the second gives the social matrix within which these foods are used. At the time the study was started the countries included were under Nazi domination and were potential recipients of relief foods when and if liberated. The order of listing from northwest to south and east permits one to observe the similarities in food patterns of neighboring countries and the gradual changes in customs with the shift in climate, agriculture, and economic status.

The studies were initiated in the interest of foreign relief agencies in order to give the planning groups a better concept of food usage and preferences in various countries. However, several persons and organizations suggested publication of the material because of its wider usefulness and interest. Wider distribution of such material seems timely, also, in view of the growing international consciousness in this country furthered by publication of several international cook books, bibliographies of nationality customs, a series of "What's Cooking in Your Neighbor's Pot?" meetings in New York, and similar international gatherings in other eastern cities.

Foods are classified according to the "basic 7" groups, a device which enables anyone interested to obtain a general picture of the nutritional strengths and weaknesses of the diet characteristic of a given country. The pertinent sociological data are also given in schematic form, thus permitting the various factors which influence food selection and usage to be seen at a glance.

In general the basic picture is set by the food habits and customs of the rural population which produces much of the food consumed. Such pertinent factors as those of region, class, rural or urban district, and religion are indicated in the outline. Comments on urban food habits are made only when they differ significantly from the rural.

Such skeleton outlines as these cannot possibly give a complete picture of the food patterns in any country. Individual and local deviations from the basic patterns indicated here will occur with great frequency. Little mention has been made of food habits of minority groups living within the borders of these countries.

For a smooth functioning relief program it is essential that local usage be determined and local personnel used in the planning and operating. The following outline, however, may help to avoid glaring errors in preliminary planning and in the purchase and shipping of food and feeding facilities.

NORWAY

Group	Foods	How Used
I	Carrots, cabbage, peas, parsley, dandelion greens, nettles, lamb's-quarters.	Boiled, steamed, cooked with meat, creamed.
II	Tomatoes, lettuce, imported citrus fruits.	Tomatoes raw and in cooking. Salad. Citrus fruits something of a luxury—used more often in *cities*.
III-A	***Potatoes,**** beets, turnips, rutabagas, leeks, onions, cucumbers, celeriac, string beans, mushrooms.	Potatoes boiled, mashed, fried, in salads, and cooked with meat or fish. Other vegetables boiled, mashed, creamed. Cucumbers, etc. raw in season. *Rural:* Potatoes several times a day. *Urban:* Potatoes used daily.
III-B	Cranberries, cloudberries, lingonberries, currants, other berries, apples, pears, dried fruits, cherries, rose hips, rhubarb.	Fresh in season, in puddings, fruit soups, sauces. Berries stored in water in crocks, or the juice bottled, or in jams and preserves.
IV	***Milk*** (cow's and goat's), ***cheese*** (mild and soft, and hard dry goat's cheese, gjetøst).	Fresh milk as beverage for children, or in coffee for adults. Milk in cooking porridge, cream sauces and gravies. *Rural:* Adults drink milk. *Urban:* Adults do not drink much milk. Some evaporated and dry milk in infant feeding.
V	***Beef***, veal, ***pork***, mutton, game, poultry, fresh and salt-water ***fish*** (fresh, salted, smoked, canned), eggs, yellow split peas, navy and kidney beans.	Fish several times a week, boiled, broiled, in puddings, fish balls, soup. Meat braised, boiled, stewed, roasted, alone or with vegetables. Much smoked meat. Fish, meat, legumes made into broths and soups. Eggs in cooking. *Rural:* Much fish and game. On seacoast, fish eaten 4 to 5 times a week. *Urban:* Much meat and fish. Smoked and salted meats and fish with bread for evening meal.
VI	***Rye***, wheat, oats, barley, rice, sago.	Whole grain rye used in flat bread, sour rye and whole wheat in leavened bread. White flour in pastry, cake and rolls. Oats and rice as porridge. Barley in soups. Rice or sago in fruit soups and puddings. *Rural:* Oat porridge several times a day. *Urban:* Less porridge used.
VII	***Butter***, margarine (some from fish oils), lard, salt pork, poultry fat, cod livers as dish or in oil.	Butter or margarine on bread, with vegetables, and in baking. Salt pork and lard in cooking. Cod livers served as main dish, boiled. Fish oil a universal supplement in winter.
Beverages	***Coffee***, cocoa, ***beer***, tea.	Coffeepot on stove all day, and coffee served frequently. Beer served with food. Chocolate drunk in afternoon, very popular with children. Some tea used in *cities*.
Condiments	Caraway seed, dill, thyme, black pepper, cinnamon, cardamom seed, citron, honey, chives, bay leaves.	Spices extensively in sauces. Meat and fish cooked and dressed with dill and other seasonings. Desserts and baked goods made with spices.

* Foods which appear in ***boldface italics*** in this and the following tables are of major importance in the diet of the respective countries.

[1] Based on material compiled in chart form by Helen S. Mitchell and Doris M. Porter for the Office of Foreign Relief and Rehabilitation Operations, and Natalie F. Joffe and collaborators and consultants from several nationality groups, for the Committee on Food Habits, National Research Council. These materials have been placed at the disposal of the authors by both organizations.

Thanks are expressed to the many experts who criticized the original chart distributed for their comments in January and February 1944, and to the authors of the various longer memoranda of the Committee on Food Habits.

SOCIOLOGICAL DATA FOR NORWAY

Sources of Food:

Rural. Meat, dairy products, some of the grain foods, root vegetables, and fruits are produced on the farms. Wild sources of food play a considerable part in the food supply, as the Norwegians consume a great deal of fish, game, wild fruits, and to a lesser extent vegetables. Coffee, tea, sugar, spices, and fish are items most generally purchased.

Urban. Norwegians in cities and even in the large coastal villages buy the largest share of their food, and food normally is bought daily or several times a week.

Kitchen and Table Equipment:

Rural. In many parts of Norway, extensive electrical installations had been made before the war, so that electrical kitchen and farm devices were in considerable use. In other areas wood stoves are in use for cooking. Copper, iron, tin, aluminum, and some enamel and earthenware vessels are used. Food frequently is stored in crocks and glass jars, either in the kitchen or in a pantry, and there may be refrigeration. Food is canned, preserved, made into jellies, dried, smoked, pickled, and salted for storage. Glass, china, and wooden dishes are popular for table use.

Urban. In the cities and most of the smaller towns, kitchens are equipped with electricity and running water. There are many modern housing developments which include the most up-to-date kitchen equipment. Electricity, gas, coal, or charcoal is used for fuel in cooking. Refrigerators are common in urban homes.

Cooking:

Rural. Boiling, stewing, braising, and baking are the most favored methods of cooking. Bread may be baked at home, for Norway has many isolated farms far from market centers. Boiled potatoes, bread, particularly "flat" bread (unleavened), and porridge are used very often, and soups of meat, fish, vegetables, and fruits are relished. Other distinctive Norwegian dishes include fish puddings, fish balls, and various types of spiced meats and fish.

Urban. Cooking methods are similar to those in country districts, although the fare may be more varied. In the cities a wide variety of baked goods is displayed in shops, including many kinds of breadstuffs and sweet rolls, buns, tarts, and pastries. A wide selection of smoked and spiced meats and fish is also available on the market.

Meal Patterns:

Rural. From 4 to 7 meals a day may be eaten: a light breakfast, followed by a heavier meal including cheese and porridge several hours later; a noon dinner with a hot main dish; an afternoon snack; a cold meal of bread, butter, cheese, and smoked meat and fish served in the early evening; "something to eat" before bedtime; and sometimes a midmorning snack. The coffeepot sits boiling on the stove and anyone may take a cup now and then. The main meals usually follow a weekly plan: fish several times a week; pea soup with sausages a common Thursday dish; a roast on Sunday. Boiled potatoes and porridge may be eaten several times a day.

Urban. Four or five meals are usual. Generally the meal plan is similar to that in the rural districts, as it is customary for working people to come home to midday dinner. The "Oslo breakfast" is served to all school children.

Food for Special States or Ages:

Few differentiations in food are made. Children must drink cod liver oil and most adults do. Children who refuse to eat may be punished by being sent away from the table or having their dessert withheld.

Beliefs and Attitudes Toward Food:

On the whole, Norwegians treat food in a very matter-of-fact way.

DENMARK

Group	Foods	How Used
I	Cabbage, carrots, peas, Brussels sprouts, sorrel, dandelion greens.	Vegetables boiled, often creamed. Cabbage boiled with or without meat. Sorrel and dandelion greens used when tender, boiled, steamed, or raw in salad.
II	Tomatoes, lettuce, some oranges and lemons, rose hips.	Tomatoes in salads, in cooking, or for sauce. Citrus fruits well liked. Rose hips boiled. *Rural:* Few citrus fruits. *Urban:* Oranges and lemons imported and widely used.
III-A	***Potatoes***, beets, turnips, cucumbers, radishes, celery, celeriac, leeks, onions, cauliflower.	Potatoes plain boiled, mashed, fried, and in soups and casserole dishes. Cucumbers, etc. raw in season. Cream sauce frequently with vegetables. *Rural:* Potatoes even more important than in cities.
III-B	Berries (all kinds), currants, apples, pears, rhubarb, raisins, bananas, cherries, plums.	All fruits fresh in season. Preserved for winter. Stewed fruits, fruit soups, pastry fillings.
IV	***Milk*** (cow's and goat's), ***cheese*** (soft and mild, also hard and dry), cream.	Fresh milk popular beverage for adults and children, also used extensively in cooking, for sauces and desserts. Some evaporated milk.
V	***Beef***, veal, pork, mutton, salt-water ***fish*** (fresh, smoked, canned), shellfish, poultry, eggs, yellow peas.	Meat roasted, stewed, ground, also braised, with or without vegetables. Many sausages. Much use of organ meats. Fish boiled, broiled, and in puddings. Smoked fish roe favored. Eggs abundantly in cooking. Yellow peas in soup.
VI	***Wheat***, ***rye***, barley, oats.	Wheat and rye made into bread. Sour rye and flat bread most common. Wheat in rolls and in cakes made with yeast. Barley in soup. Oats as porridge.
VII	***Butter***, margarine (made of vegetable, whale or other fish oils and butter), lard, salt pork.	Butter or margarine on bread, in cooking and baking. Lard with meat, fish, or vegetables. *Rural:* Butter often a "cash crop." *Urban:* More butter, less other fats.
Beverages	***Coffee***, tea, ***beer***.	Denmark was the largest per capita consumer of coffee in the world, served with cream or as café au lait. *Urban:* More coffee and tea than in rural areas.
Condiments	Pepper, thyme, dill, mace, cinnamon, cloves.	

SOCIOLOGICAL DATA FOR DENMARK

Danish foods and food habits are similar to those of Norway. Only marked differences will be noted.

Sources of Food:

Rural. Owing to the milder climate, a greater variety of foods is available in Denmark than in Norway, and there are also few or isolated farms. Danes eat more butter, dairy products, beef, poultry, and fresh vegetables and fruits; and less porridge, smoked pork, game, salted and dried meats and fish than do Norwegians.

Urban. The standard of living in Denmark is high, and urban residents tend to buy large quantities of butter, cream, beef, and coffee, and have highest per capita consumption of sugar in Europe.

Kitchen and Table Equipment:

Rural. Abundant electrification and modern conveniences are available.

Urban. Most houses are equipped with up-to-date fixtures.

Meal Patterns:

Rural. Whereas the "first breakfast" is largely a matter of family or individual preference in Norway, it is customary in Denmark in many places: rolls and butter, and coffee comprise this meal. Fresh meat or fish, instead of the smoked or cured, is apt to be used for the main dish at noon. For the evening meal a processed cheese is likely to be favored.

Urban. Where working conditions permit, the second breakfast of the day is heavy, the first being the "continental" breakfast. Much white flour is used for rolls, bread, pastry, and crackers, although the staple breadstuff is either sour rye or pumpernickel.

NETHERLANDS

Group	Foods	How Used
I	***Carrots***, cabbage, endive, Brussels sprouts, green beans, broccoli, spinach.	Vegetables frequently boiled, often creamed, some cooked with meat. Combinations of vegetables popular. Sauerkraut.
II	Some citrus fruits, few tomatoes, lettuce.	Citrus fruits something of a luxury everywhere, used more often in *urban* areas.
III-A	***Potatoes***, turnips, cauliflower, kohlrabi, cucumbers, onions, beets.	Potatoes boiled or mashed. Hutspot, a combination of carrots and potatoes boiled. Cream sauces often. Cucumbers raw in season.
III-B	***Apples***, pears, strawberries, cherries, plums, currants, raisins, citron.	Fruits raw in season, also made into jams, jellies, and preserves. Dry fruit in baking.
IV	***Milk*** (cow's), ***cheese*** (all types, especially Edam and Gouda).	Fresh milk as beverage for children and used extensively in cooking, also in coffee and chocolate. Dry, evaporated, and condensed milk to some extent. Buttermilk. *Rural:* Some use of milk formulas in infant feeding. *Urban:* More use of infant formulas made with fresh or dry milk.
V	***Pork***, ***beef***, veal, poultry, salt-water fish, especially ***herring***, (fresh, salted, smoked, pickled), shellfish, ***eggs***, yellow split peas, navy and kidney beans.	Meats stewed, braised; broths and gravies popular; also smoked beef. Fish prepared in many ways, eaten as "snacks." Eggs in all ways. Split peas in soup with sausages. Other legumes boiled. *Rural:* Use less meat, and, inland, less fresh fish.
VI	***Wheat***, oats, rye, barley, rice, cornstarch.	Wheat in white bread, rusks, rolls. Rye bread, dark and sour. Oats, rice, and barley in porridge. Barley and rice in soups. Cornstarch in baked goods and puddings.
VII	***Butter***, margarine (made of vegetable oils and butter), lard.	Butter in baking and on bread. Margarine on bread. Lard in cooking.
Beverages	***Cocoa***, coffee, tea, ***beer***.	Cocoa as beverage for children and adults. Coffee, tea for adults. Beer with food or by itself. In *upper class* homes, tea served in bed before arising, also in late afternoon.
Condiments	Chocolate, nuts, honey, curry, cinnamon, cloves, allspice, mace, dill, peppercorns, capers, ginger.	Chocolate in baking, as candy, or on bread. Extensive use of spices with meat, fish, and in baking.

SOCIOLOGICAL DATA FOR THE NETHERLANDS

Sources of Food:

Rural. Much of the food consumed is produced on the farm, but frequent purchases are made of fish, which is brought in from the seacoast, and of spices, flour, sugar, tea, coffee, and chocolate.

Urban. Most of the food is purchased by the housewife as she needs it. On city streets many small shops and vendors sell individual items of food to be consumed on the spot.

Kitchen and Table Equipment:

Rural. In many of the country districts tile stoves heated with peat bricks or coal are used. Food is stored in cellars, *e.g.*, the sauerkraut in crocks, potatoes buried in sand, and sausage kept in sacks.

Urban. Gas or coal stoves are in common use. *Upper class* homes have refrigerators, but others may keep their food on the veranda or window sill.

Cooking:

Rural. Stews, soups, boiled foods, all cooked for a long time, are common main dishes. There is a marked seasonal difference in the preparation of foods: In winter, vegetables are cooked and served together, while in summer the same foods may be served separately. Split-pea soup and brown beans are "winter" food. Cabbage-type vegetables are boiled and mashed. Blood sausage is a common country dish.

Urban. Urban and rural foods and cooking techniques are similar. *Upper class* people cook and serve the same foods as do the *lower* but less often. A boiled chicken and the thin clear broth with rice are desired Sunday fare, which not everyone can afford. Those who have lived in the Netherlands East Indies use more curry, rice, and highly seasoned foods than do others. Blood sausage is regarded as a "country" dish by urban residents.

Meal Patterns:

Rural. Four or more meals are eaten each day, including a midmorning and a midafternoon snack, with the heavy meal served in the middle of the day. If a farmer is working in the fields, he will take some food to eat at 11 a.m, or in midafternoon. The season and the day of the week determine what is served at each meal. In the inland areas, for example, Friday is fish-day (fresh fish is imported for the Catholics). Brown beans are a common Saturday food. Bread with butter is a main dish with lighter meals. The main meal is served in the evening where there are school children or adults who work in the city. Normally food is served in a large dish and apportioned by the mother.

Urban. In *upper class* homes the day begins with tea and rusk, followed by a heavier breakfast later in the morning. In *working class* homes these two meals may be telescoped. Tea or coffee is often served at 11 a.m. and again in the afternoon, and even offices may make provision for this. Soup and dessert are rarely served at the same meal in *lower class* homes except on Sunday. Visiting is popular at the tea or coffee hours between meals. Professional people may take their heavy meal at night, but noon is the usual dinner hour.

Food for Special States or Ages:

Rural. Children generally are supposed to drink milk; some women use milk as a beverage, but it is considered odd for a man to use it as a beverage.

Urban. In *middle* and *upper class* households a child usually has to eat a token piece of any dish even if he does not like it. In *lower class* homes they tend to be more lax in this respect.

Beliefs and Attitudes Toward Food:

Culinary skill is emphasized and a prized possession of any housewife. The taste and appearance of food are important, and food ideally should have definite color. According to folklore, pregnant women crave herring and it is believed to be good for them.

BELGIUM

Group	Foods	How Used
I	Carrots, spinach, green beans, cabbage, Brussels sprouts.	Vegetables boiled, in soups and stews, with or without cream sauce.
II	Tomatoes, chicory, endive, lettuce, some citrus fruits.	Leafy greens raw in salads. Tomatoes in cooking. Citrus fruits largely in *urban* centers.
III-A	***Potatoes***, beets, turnips, onions, mushrooms.	Potatoes plain boiled, mashed or fried, cooked with other vegetables and meat. Other vegetables boiled, creamed, or in soups. *Rural:* Vegetable dishes and bread the staff of life for many. *Urban:* The *poor* use more vegetable dishes than the *rich*.
III-B	***Apples***, ***pears***, plums, cherries, berries, melons, dried fruits.	Fruits raw in season, also stewed and in baking. Some preserved for winter. Dried fruits in baked goods.
IV	Milk (cow's), ***cheese*** (soft and mild).	Fresh milk for children, in coffee and chocolate for adults, and in cooking. Some evaporated and condensed milk in cooking and infant feeding.
V	***Pork***, ***beef***, ***veal***, poultry, mutton, salt-water fish (fresh, dried and smoked), shellfish, eggs, split peas, navy beans.	All parts of animal used, much sausage. Meat most often stewed or in soups. Fish stewed or boiled. Eggs in cooking, in casserole dishes. Dried legumes boiled or in soups.
VI	***Wheat***, oats.	Wheat in white bread and rolls or rusks. Many other varieties of baked goods. Oatmeal as porridge.
VII	***Butter***, lard.	Butter on bread and in baking. Lard for other purposes.
Beverages	***Coffee***, cocoa, ***wine***, ***beer***.	Flemings drink more beer, Walloons favor wine. Coffee as café au lait.
Condiments	Many herbs (chervil, parsley, thyme, bay leaves, celery leaves and seed, cinnamon, mustard), also many kinds of nuts, honey, and chocolate.	

SOCIOLOGICAL DATA FOR BELGIUM

Southern Belgium, the area of the Flemings, takes the tone of its cooking from France; while in the North, Dutch influence is more marked.

Sources of Food:

Rural. Most of the food used is raised on the farm, the balance purchased at the market. Very often bread is bought.

Urban. By far the largest portion of the food used in homes is purchased. Occasionally some items are bought in bulk; others, such as bread and milk, bought daily or more often.

Kitchen and Table Equipment:

Rural. Tile or iron stoves heated by wood, charcoal, or coal are usual. Food may be stored in cellar or well. Copper, iron, and some aluminum pots are used, and almost every home has a wooden, box-type coffee-grinder. Sometimes wooden or stoneware cups or mugs are used for coffee or beer.

Urban. Gas stoves are in common use in the cities. American kitchen gadgets are extremely popular when they can be afforded.

Cooking:

Rural. Boiled potatoes and other vegetables, fried potatoes, meat or fish, soups, and salads are usual main dishes.

Urban. Cooking methods do not vary much from those used in the country. *Upper class* families enjoy a wider variety of foods, use more sauces, and pay more attention to delicacy of seasoning than do poorer people.

Meal Patterns:

Rural. Four meals a day is the customary pattern: a breakfast of rolls or bread, cheese and/or jam, coffee (either black or with a little milk); dinner at noon with soup, meat or fish, vegetables, potatoes, occasional puddings, fruit, and beer (North), wine (South), or water; coffee and bread and butter or cakes in the afternoon; supper at 7 or 8 p.m. may include gruel, bread and butter, cheese, jam, beer or wine, and water. *Lower class* families may not have so wide a variety as this. Beer or wine may be taken between meals.

Urban. The same meal plan is followed as in rural areas. It is customary for many men to return home for the midday meal with their families. *Upper class* families use more wine with meals.

Food for Special States or Ages:

Children may be given chocolate to eat or drink. In *upper class* homes, it is not common for adults to drink milk. Catholics abstain from meat on Friday.

FRANCE

Group	Foods	How Used
I	Carrots, green peas and beans, artichokes, broccoli, Brussels sprouts, spinach, asparagus, peppers, endive.	Often boiled, stewed, or in soup. In South may be dressed with oil or cheese. Great regional variation in vegetables used as well as in cooking styles.
II	***Citrus fruits*** (in South and *cities*), ***tomatoes***, all kinds of ***salad greens***.	Tomatoes raw or in soups, stews, and sauces. Salad greens dressed with oil and vinegar or "wilted." Citrus fruits a luxury item in North and in *cities* during off seasons.
III-A	***Potatoes***, ***cabbage***, beets, turnips, onions, leeks, mushrooms, celery, endive, salsify.	Potatoes boiled, fried, in soups and stews. Other vegetables boiled, in soups and stews, and with eggs.
III-B	***Grapes***, apples, pears, cherries, peaches, apricots, berries, plums, melons, figs (South), dates (imported).	Fruits raw when available. Grapes for wine, apples and pears for cider. Some fruits cooked as desserts or in baked goods.
IV	***Milk*** (cow's), ***cheese*** (all types from cow's and goat's milk). Some evaporated, condensed, and dry milk.	Boiled milk for children. Adults in cities rarely use milk except in coffee or chocolate. Canned or dry milk in infant feeding and beverages. Cheese as such and in cooking.
V	***Beef***, ***veal***, ***pork*** (fresh and cured), mutton, game, salt and fresh-water fish, shellfish, poultry, eggs, ***lentils***, dried peas, kidney and other beans.	All parts of animal used. Meat boiled, stewed, grilled, roasted, fried, in soups. Sausage eaten separately or cooked with other foods. Fish in soups, boiled, broiled, fried, baked. Poultry in soup, stewed, sautéed. Eggs popular in all forms. Lentils and other legumes boiled, or in soups and stews.

FRANCE—*continued*

Group	Foods	How Used
VI	***Wheat,*** barley, rice, maize.	White bread, rolls, baked goods widely used. Barley and rice in soups. Maize and more rice used in South.
VII	***Butter,*** poultry fat, lard and salt pork, olive and other seed oils.	Butter preferred for baking, in much of the cooking, and on bread if any spread used. Poultry fat in cooking. Lard and salt pork with roasts, most often in North, and *rural* districts, also for deep-fat frying. Olive oil is preferred for salad dressing, and for all cooking in South.
Beverages	***Wine, cider, coffee,*** cocoa, beer.	People of all ages drink wine. In North, both apple and pear cider are common beverages. Coffee, often made with chicory and served as café au lait, almost universal breakfast beverage. Chocolate popular.
Condiments	Parsley, chives, chervil, garlic, tarragon, thyme, cloves, cinnamon, allspice, pepper, bay leaves, truffles, capers, saffron, vinegar.	All used to dress food as are many spices not listed.

SOCIOLOGICAL DATA FOR FRANCE

There is a marked regional variation, as well as class, religious and other socio-economic differentiations within one *area*, with respect to food in France.

Sources of Food:

Rural. Rural France embraces the small villages, as well as isolated farming communities. Much of the food is produced on the farm, but there is also extensive trading on market days, when foods not raised at home are purchased. When available, bread is bought in preference to baking it at home.

Urban. Most of the food used is bought, although some people have gardens or keep fowl or rabbits. In *upper class* families the servant does the shopping, the accounts being rendered monthly; otherwise the housewife does the bulk of the buying. An untrained servant is taught how to shop by the mistress of the house. It is usual to patronize the same merchants each day, even though there is careful comparison of prices. Bread is bought fresh for each meal when possible.

Kitchen and Table Equipment:

Rural. In most rural homes the stoves burn charcoal, wood, or coal. Food is kept in the cellars or the pantry. Cooking utensils are commonly copper, cast-iron, and sometimes tin. Wooden and earthenware bowls are used in preparing food, storing it, and may even appear on the table.

Urban. Except in the most modern city homes, coal or wood ranges are usual; some of the newer houses have gas stoves and mechanical refrigerators. In the older buildings butter is placed in water to keep cool and milk on the window sill, for these usually are bought only as needed.

Cooking:

Rural. Boiling, stewing, braising, frying, and roasting are the usual methods of cooking main dishes. Soups are most popular and along with bread form the main dish at the chief meal of the day for *lower class* families. Although most soups are vegetable soups, some stock made from bones and a bit of meat or fat are used for flavor. In *lower class* families, elaborate desserts and baked goods appear only on holidays or when there are guests.

Urban. Urban cooking techniques do not differ basically from those in the country. In the cities, a wider variety of foods is available than in rural districts. Although it is customary for women to do the cooking (the housewife in *lower class* families, the servants in *well-to-do*), men know a good deal about it. Professional cooks in restaurants or in rich homes usually are men. In general, restaurant cooking is thought to be as good as or better than home cooking. Milk is regarded as an ingredient for cooking, like flour, rather than as a food in itself. Fowl has more prestige than pork or beef and, if cost permits, it is eaten on Sunday and holidays.

Meal Patterns:

Rural. Three meals a day are the rule, but a midmorning or afternoon snack of bread, sausage or cheese, and wine is not unusual. Men in the fields take some food along to eat at these times. An early breakfast of bread and coffee or just coffee; with the heavy meal at noon or night, depending on seasonal or family factors; and the third meal of bread, cheese, sausage, eggs, and fruit or salad, with wine, cider (North), or beer (North and East) are usual. Fish or eggs normally are eaten on Friday.

Urban. For the city the same meal pattern is followed except that it is more usual to have the chief meal in the evening. When dinner comes at the end of the day, it is common to have a snack at 4 or 5 p.m. *Upper class* families almost invariably dine in the evening. People who live alone rarely cook for themselves and prefer to eat at a restaurant or pension where they are known. Coffee usually is drunk for breakfast or between meals, rather than at the end of a meal.

Foods for Special States or Ages:

Rural. It is not uncommon for adults to drink milk (plain, fermented, or in coffee), although wine, beer, or cider, depending on the region, is the customary beverage. In some places folk belief regards beer, lentils, and other beans in the diet of pregnant women as lactogenic. Folk tradition in certain areas maintains that the craving of a pregnant woman for a specific food must be satisfied or the child will be marked.

Urban. Hot milk in the morning is regarded as strengthening for children, as is gruel. If visitors appear at mealtime, they are asked to remain, but there is little entertaining at meals except among relatives. It is customary to offer wine to a caller, and wine or syrup in water to children. Teas are "good" for the ill, and milk is "bad" in some diseases. Children are given tastes of each dish as it comes to the table, but if they dislike it, they are given bread and cheese. Children usually prefer cheese to milk. Chocolate is a favored beverage for children, and liked by some adults for breakfast or between meals.

ITALY

Group	Foods	How Used
I	***Greens, peppers,*** broccoli, zucchini, green beans.	Greens raw or cooked in water, oil, or gravy. Sometimes cooked with dried legumes. Zucchini stuffed or baked.
II	***Tomatoes, oranges, lemons, salad greens.***	Tomatoes raw, in soups, gravy, or cooked with meat and fish, may be preserved as paste. Citrus fruits in season.
III-A	***Onions,*** leeks, mushrooms, cucumbers, eggplant, potatoes.	Onions and cucumbers raw. Onions important in cooking. Eggplant fried or cooked in combination with other vegetables. Leeks in soups and stews. Potatoes used to some extent in North.
III-B	***Grapes, pears,*** plums, melons, quinces, cherries, peaches, figs, dates, apricots, apples, dried fruits.	Often raw as dessert. Grapes made into wine and dried as raisins. Fruits used mostly in season except dried fruits.

ITALY—*continued*

Group	Foods	How Used
IV	Milk (mainly goat's, some cow's), ***cheese*** (hard and dry, also soft and fresh).	Milk mainly as a beverage for children, in coffee for adults. Cheese used as such and grated to dress and season cooked foods. *Urban:* Dry or condensed milk formulas for infants if human supply fails.
V	***Pork,*** beef, veal, goat, poultry, salt-water ***fish*** (fresh and dried, including squid, octopus, eel), shellfish, eggs, ***chick peas,*** lentils, other kinds of peas and beans.	Meat cut up and stewed, fried, ground, cooked with pasta. Sausage in soup or with bread. Fresh pork avoided in summer. Dried fish boiled. Fresh fish boiled, stewed, or fried. Shellfish steamed or fried. Eggs in omelets or cooking. Legumes in soups or boiled.
VI	***Wheat,*** maize, rice.	Wheat (whole grain and white flour) in bread. White flour in pasta, usually boiled and served with sauce. Rice in soup or with main dishes. Maize a main dish as polenta or gnocchi.
VII	***Olive oil,*** lard, seed oils, butter.	Olive oil universal salad dressing. Lard, olive and seed oils in cooking (lard, North, oil, South). Butter preferred for baking.
Beverages	***Wine,*** coffee, some cocoa.	Wine at most main meals and for all ages. Coffee, when it can be afforded, preferred for breakfast, served as café au lait. Often combined with chicory. For main meals made very strong (espresso) and served black with sugar.
Condiments	***Garlic,*** olives, herbs, chives, thyme, bay leaves, red and black pepper, wine vinegar.	

SOCIOLOGICAL DATA FOR ITALY

Sources of Food:

Rural. Most of rural Italy is organized on the village plan, and often only the *wealthy* families live in isolated homes. Much of the food is produced for home use, but what is needed is bought from time to time in shops and markets. Traditionally, women do the buying.

Urban. Shopping, except for staple articles, is done each day by the woman of the household.

Kitchen and Table Equipment:

Rural. Few of the houses have running water and the women carry in water from the well or fountain. Charcoal stoves are common, and fuel is at a premium. Copper, iron, tin, and pottery vessels are used for cooking. Usually food is stored in sacks or crocks and barrels in the kitchen. Bread may be made at home, baked at the village oven, or purchased.

Urban. Some of the more modern houses are equipped with running water, gas, and electricity, but there are still many homes in which all water has to be carried in, and the cooking is done on charcoal or coal ranges. Food is stored as it is in the country. Bread is either bought, or the dough mixed at home and taken to the baker for baking.

Cooking:

Rural. Much of the cooking is done by boiling; other common techniques are stewing, frying, and roasting. Only rarely are any foods cooked a long time, and usually they are prepared fresh for each meal. In the North, lard is used in cooking; in the South, oil is preferred. Other regional differences are: in the North, more pork and smoked meat are used, potatoes and yellow corn meal, cooked as a thick boiled porridge (polenta) or cubes of cooked maize meal (gnocchi) served with cheese. Thick soup is a favored main dish.

Urban. Cooking methods are similar to those customary in the country, and though there is a wider variety of foods available, the great point of differentiation is still regional.

Meal Patterns:

Three meals a day is the common pattern: a breakfast of bread, cheese, some fruit, and perhaps café au lait; for the children, milk, or milk flavored with coffee. The other two meals, similar in character, comprise two main courses such as a thick soup and a vegetable, meat, fish, egg or legume dish, with raw vegetables served as salad an important part of the meal. Cheese is used extensively, as a food by itself and to season other food. Pasta, spaghetti, macaroni, and ravioli are important and may appear on the table two or three times a week, often on Sunday, Tuesday, and Thursday. On Friday, and frequently on Wednesday, throughout the year as well as during Lent and Advent or other fasting periods, in general the people abstain from meat. During the summer many Italians eat no pork nor any of its products, such as lard. There are special dishes for the observance of saints' days and other festivals. Usually the mother and grown daughters sit at the table, except when there are men guests, when they wait on table and eat afterwards.

Foods for Special States or Ages:

Children usually drink milk, but adults on the whole do not care for milk. Eggs and chicken broth are considered "strengthening" for the aged and invalids. A pregnant woman, according to folk belief, must be given any food that she wants, otherwise the child will be marked. Men may go into cafés and taverns to drink wine, but except in *upper class* urban families, it is regarded as unseemly for a woman to do this, and when she does she rarely goes alone.

Beliefs and Attitudes Toward Food:

The Italians place a positive valuation on the specific attributes of food. For many of them, red foods are blood-building, while bread also "makes blood" as well as being "strengthening." They have proverbs which illustrate these beliefs. Many people of Italy are suspicious of "mixing" milk and acid foods such as tomatoes or citrus fruits, *e.g.*, eating them at the same meal.

GREECE

Group	Foods	How Used
I	***Greens, peppers,*** okra, cabbage, vine leaves, zucchini.	All vegetables cooked with a little olive oil and eaten hot or cold, or cooked in combination with meat, fish, or other vegetables. Many vegetables stuffed.
II	***Tomatoes, oranges, lemons, salad greens.***	Tomatoes raw in salad, in cooking and made into paste. Citrus fruits in season. Lemons to dress salads or cold cooked foods, with chicken and rice soup.
III-A	***Onions, eggplant,*** cauliflower, cucumbers, some potatoes.	Onions in cooking, scallions raw. Eggplant fried, stuffed, cooked with other vegetables. Cauliflower boiled. Cucumbers raw or pickled. Potatoes cooked with meat or fish in stews.
III-B	***Grapes,*** melons, plums, cherries, quinces, peaches, apricots, pears, raisins, figs, nuts, dates.	All fruits raw in season. Grapes made into wine, dried as raisins. Some preserves and jams made.
IV	Milk (goat's, sheep's, cow's), ***cheese*** (soft and mild, hard and dry, from all types of milk).	Milk often boiled for children. Formula of boiled, dry, or condensed milk if human supply fails. Yaourti (fermented milk) is eaten by itself or with pastry.

GREECE—*continued*

Group	Foods	How Used
V	***Mutton, lamb,*** beef, some pork products, goat, poultry, eggs, salt-water ***fish*** (fresh, salted, smoked), smoked roe, shellfish, squid, octopus, ***white beans,*** other legumes.	Meat often cut up or ground. Fish fried, stewed with vegetables. Poultry in broth or pilavi. Legumes boiled, stewed, mashed, eaten hot or cold.
VI	***Wheat,*** rice, maize.	Wheat in bread, whole grain more common in *rural* areas. Wheat flour in pasta. Maize in polenta. Rice in pilavi (boiled grains dressed with meat and gravy, also as stuffing for vegetables).
VII	***Olive oil,*** seed oils, salted black olives, little butter.	Oil in cooking. Olive oil to dress hot or cold vegetable dishes and salads. Butter in baking. Salted black olives an important source of fat.
Beverages	***Wine,*** coffee.	Wine at meals for most adults and many children. Coffee as beverage in morning, at other times made in Turkish fashion and served in small cups.
Condiments	Honey, herbs, sesame, caraway and pumpkin seeds, ***nuts*** (pignolia, hazel, pistachio).	Seeds between meals as snacks. Nuts important as dessert, in pastries, and in other cooking.

SOCIOLOGICAL DATA FOR GREECE

Sources of Food:

Rural. In villages most of the food is home-produced, other foods are bought as required. If facilities permit, bread is brought to the town oven to be baked; otherwise it is made at home.

Urban. In the large cities food is bought every day. Bread may be mixed at home and baked in the community oven, or it may be bought.

Kitchen and Table Equipment:

Rural. Many houses have wells. Cookstoves burn charcoal and have no ovens, except in small villages, as fuel is at a premium. Grain, oil, and other foods are kept in storerooms, in large jars or cases, or in cellars. Some foods are kept temporarily in wells.

Urban. Some modern houses have stoves which use gas, coal, wood, or electricity, but many still burn charcoal. *Wealthy* families may have iceboxes or mechanical refrigerators; others use closets or wire screening to protect food from flies.

Cooking:

Rural. Most Greek main dishes are stews, made by browning onions in oil or fat, and then adding ground or cut meat, grains, legumes, vegetables, and fish, singly or in combination. Browned ground meat often is used in stuffings. Many of these dishes are eaten cold, dressed with olive oil and lemon. Tomatoes are used extensively in cooking meat, fish, and vegetable dishes. Tomatoes and other vegetables are frequently stuffed. Legume dishes are common in the winter. Skewered pieces of meat may be grilled over an open fire. Fish dishes are common and well liked. They use few soups. Milk is abundant only in spring, when goats freshen.

Urban. Upper class people use more meat than do others. Fowl, when and if it can be obtained, is a favored Sunday dish among the *well-to-do.* The use of white bread is another class distinction: *i.e.*, it carries prestige. In Asia Minor, more butter than olive oil is used. Everywhere butter is the preferred fat for baking.

Meal Patterns:

Two substantial meals a day are usual in both city and country, for breakfast tends to be sketchy: bread, a bit of fruit or cheese, possibly some coffee. The main meals of the day, around 1 p.m. and 7 to 9 p.m., consist of a main dish (often cold or reheated at night), bread, cheese, fruit, nuts, olives, a mixed salad, and wine. On Wednesday and Friday no meat nor butter may be eaten; instead they eat fish, olives, olive oil, and vegetable dishes. There are two 40-day fasts during the year, Lent and Advent, when the same restrictions are in force. Citrus fruits and legumes are important foods in winter. Except on some of the islands, little pork or pork products are eaten. The Greeks have many festivals and like to go on picnics at which a whole lamb or kid may be barbecued by the men. Restaurants usually are confined to *urban* areas. Guests are offered a bit of sweet preserves and a glass of water, the sweets being served in a bowl from which each guest helps himself with a spoon. Coffee, Turkish-style, is served to guests, and men drink it in cafés. When there are guests, the women eat later.

Foods for Special States or Ages:

Children may drink milk, but more commonly they have wine or coffee. Babies are fed rice, arrowroot, or wheat cereal, but often no other foods except human milk until weaned. It is a mark of favor to give a child presents of food, and children are usually given the food they prefer. According to folk belief, a pregnant woman must immediately be given any foods she "smells" or she may have a miscarriage.

Beliefs and Attitudes Toward Food:

Bread truly is the staff of life in Greece; it must be respected and never wasted. All foods must be eaten alternately with bread: *i.e.*, a bite of bread, a bite of other food, and another bite of bread before anything else is eaten. The Greek word for "starving" literally means "to be without bread." The Greeks verbalize a great deal about food and use terms applicable to food about people.

BULGARIA

Group	Foods	How Used
I	***Cabbage,*** peppers, carrots, green beans, pumpkin, squash, vine leaves, spinach.	Cabbage often as sauerkraut. Pickled cabbage leaves, vine leaves, peppers stuffed and stewed. Peppers raw, or baked, served cold with oil and vinegar. Sliced pumpkin baked, served with cheese. All types of vegetables stewed, and many baked into a pie (banitsa).
II	Tomatoes.	Raw, stewed with meat or other vegetables, and stuffed and cooked.
III-A	***Eggplant, onions,*** potatoes, beets, celery, cucumbers, turnips.	Eggplant stuffed with meat or fried. Onions raw or cooked with meat and other vegetables. Potatoes baked in layers with meat and other vegetables. Celery raw or baked with lamb.
III-B	***Plums, apples, pears, melons,*** cherries, peaches, grapes, berries, dried fruits.	Fruits fresh in season, sun-dried for winter. Apples in pastry. Prunes baked with lamb. Fruit preserves served to guests.
IV	Milk (sheep's and cow's), yoghurt, sour cream, ***cheese*** (soft and mild, hard and dry).	Adults often drink hot sugared milk. Cold boiled milk for children. Cheese frequently for breakfast or served with vegetables, used to fill banitsa. Sour milk with raw vegetables; sour cream in soups.
V	***Mutton, lamb, goat, pork,*** beef, veal, poultry, some salt-water fish, eggs, ***navy beans, dark beans, white beans, horse beans,*** lentils.	Meat stewed with vegetables (mandja). Ground meat often used. Organ meats popular, brains and kidneys in soups. Eggs fried, scrambled, hard-boiled, largely by *upper class.* Beans boiled and stewed.
VI	***Wheat,*** maize, rye, rice.	Wheat flour in bread (white for *urban*, dark for *rural*). White flour for banitsa dough. Corn meal as polenta. Rye in bread, largely in foothill region. Rice for stuffing vegetables.

BULGARIA—*continued*

Group	Foods	How Used
VII	***Sunflower seed oil,*** lard, black olives, olive oil, butter, poultry fat.	Oils in cooking and to dress vegetables and salads. Lard in cooking. Black olives (imported) as fat food, but a luxury as are butter and olive oil. Butter preferred fat for baking.
Beverages	***Coffee, tea*** (of tea or other leaves).	"Tea" for breakfast. Coffee, Turkish-style.
Condiments	***Paprika,*** garlic, herbs, honey, vinegar, parsley, walnuts, and poppy, sesame and caraway seeds.	Foods highly seasoned. Honey and nuts in pastry.

SOCIOLOGICAL DATA FOR BULGARIA

Sources of Food:

Rural. Most food is produced at home. Of the population, 80 per cent live in villages, and they raise what is needed, except for some seasonings, olives, and coffee. Most breads and other baked foods are baked in community ovens—long low "caves," paved with flat stones, where each family's dough is baked by the village baker. Much food is preserved.

Urban. Food is purchased as needed. White bread is favored and almost invariably it is bought.

Kitchen and Table Equipment:

Rural. Each house has a small wood stove and some have a small open oven. Wooden trays and bowls are used in preparing food, and tinned copper or earthen pots for cooking. Bags, kegs, and crocks are used in sorting. Wooden blocks are employed to press meat and sausage for preservation. In some villages food is served on a low table and the family sit on the floor and serve themselves with individual forks from a central dish. Elsewhere tables and chairs are used but even so individual plates may not be used except at feasts.

Urban. Some of the more up-to-date buildings have modern kitchen equipment. *Upper class* families, when they can afford it, tend to acquire modern kitchen furniture and appliances.

Cooking:

Rural. Stews of meat, legumes, and vegetables, filled pastries, baked meats with vegetables, vegetables stuffed with ground meat, and soups are the most important main dishes. Bread, beans, and sauerkraut are staple foods, and the *lower classes* may subsist entirely on these; those who can afford them add onions, hot peppers, and fruits and vegetables in season, and the *upper classes* use these foods as well as meat, cheese, and soured milk. Smoked pork is used mainly in winter and in the corn-growing areas, while along the seacoast more fish is eaten. Cooking, other than public baking, is the traditional task of women.

Urban. Here *upper* and *middle class* people use more meat (especially beef and veal), fish, and butter than do rural residents; otherwise the style of cooking is similar. Food is highly seasoned in both locales.

Meal Patterns:

Rural. Three meals a day are customary: a breakfast of linden or black tea, bread, white cheese, and sometimes black olives, also hot sugared milk; dinner, usually served at noon, a stew, salad in summer, bread, and perhaps filled pastry; in the evening, similar foods are served cold, only those cooked with lard may be reheated. In *towns* and *cities,* Turkish coffee may be served after a heavy meal, or to guests in the home, and may be taken by men in coffee shops. Women serve the men, but all eat together, and the children wait until the adults have begun to eat. The Lenten fast of 40 days is observed by the devout who take no food of animal origin, even fats, during this period, while the less devout abstain from these foods for 3 days a week. Dried, salted, and smoked foods are featured at winter meals. Bread is the basis of the meal; the stew "accompanies" the bread except in *cities* where this attitude is less evident. Poultry is favored for Sunday and holidays. Guests are served preserves and water.

Food for Special States or Ages:

Children are given cold boiled milk. Deprivation of food is not used as a means of punishment, and in *villages* and among *low-income* families children accept food placed before them as a matter of course. In *upper class urban* homes when children do reject food no concern is manifested. Babies are nursed when they are hungry, and from 6 months on are given a few supplementary soft foods such as bread soaked in stew or mashed beans. Broth and raw eggs are considered good for invalids.

Beliefs and Attitudes Toward Food:

Food is eaten "to fill the stomach," and more elaborate foods which involve long preparation or many ingredients carry more prestige than do simple ones. While cabbage and beans are considered "common" fare, they are not rejected even though viewed as "low-class."

ROMANIA

Group	Foods	How Used
I	***Cabbage,*** peppers, carrots, green beans, cucumbers, squash, vine leaves, pumpkin.	All kinds of vegetables in soups and stews, and pickled. Cabbage often as sauerkraut. Many vegetables stuffed and steamed, including pickled cabbage and vine leaves.
II	Tomatoes, some lemons.	Tomatoes raw and in cooking. Lemons and lemon juice as flavoring and garnish, usually in *upper class urban* homes.
III-A	***Potatoes,*** onions, beets, turnips, eggplant, radishes, leeks, okra, mushrooms.	Potatoes in soups, cooked with other vegetables or meat. Many soups made with fermented vegetables and other vegetables added later. Onions raw and extensively in cooking.
III-B	***Apples, plums,*** pears, melons, cherries, peaches, grapes, berries, dried fruits.	Raw fruits in season. Grapes made into wine. Many preserves, jellies, and syrups.
IV	***Milk*** (cow's, goat's, sheep's), fermented milk, sweet and sour cream, ***cheese.***	Boiled milk given to children. Sweet or sour cream served with soup. Cheese frequently by itself or with cooked vegetables.
V	***Pork*** (fresh and smoked), mutton, lamb, beef, veal, poultry, game, fresh-water fish (smoked, fresh), shellfish, few eggs, ***white beans,*** other beans.	Pork, mutton, and lamb eaten everywhere. Beef and veal *urban,* poultry on holidays. All parts of animal used in soups, stews, grilled, ground. Fish boiled, marinated, grilled, steamed, etc. Legumes in soup or boiled, served with oil. Eggs in haute cuisine and for holiday baking.
VI	***Maize, wheat,*** rye, barley, rice.	Yellow maize meal boiled (mamaliga), the staff of life for *rural* population. Wheat in bread, pasta, and dumplings. *Urban* people eat more bread. Rye in bread in Bukovina. Barley in soups. Rice in soups, for stuffings, or with meat.
VII	***Lard*** ("white bacon"), seed oils, poultry fat, butter, black olives, olive oil.	Lard and seed oils in cooking. Oil to dress vegetables. Butter a luxury item, preferred for baking. Black olives an important source of fat.
Beverages	***Wine,*** coffee.	Coffee Turkish-style.
Condiments	***Paprika, garlic,*** all kinds of spices, herbs, vinegar, nuts, seeds, horse-radish.	Foods highly seasoned.

SOCIOLOGICAL DATA FOR ROMANIA

Sources of Food:

Rural. Much of the food is produced at home, although some is bought, and men as well as women go to market. Recently, village ovens have been built on a large scale and thus bread is being more widely used.

Urban. Some foods are produced, even in cities, when space permits. Bulgarians produce and sell much of the vegetable produce in city markets. *Upper class* families usually send the servant to market. Men may go to market but traditionally this activity is in the hands of the women who are keen buyers and like to bargain.

Kitchen and Table Equipment:

Rural. Romanian households are immaculate, and in many places at the expense of having to carry water from the well. Cooking is often done in a fireplace, equipped with iron tripod from which the kettle hangs. Stoves using coal, wood, gas, and electricity are being introduced, especially in *urban* areas, but the "summer" stove, a pit hearth out of doors, is still used in some areas. Indoors, food is eaten at the table around which the family sits or kneels. Staples may be stored in the attic. A hand-mill is used to grind corn in small amounts, but usually grain is ground at the mill and stored in bags or wooden boxes in the hearth room which serves as the winter kitchen. Running water and refrigeration are rare in the country but are provided in the newer houses in *cities*.

Cooking:

Rural. Highly flavored soups, stews, salads, and grilled dishes, often seasoned with paprika and garlic, are relished. Pickled cabbage, vine leaves, squash, eggplant, peppers, and tomatoes may be stuffed with bread, grains, and ground meat and steamed. Chopped pickled cabbage is steamed in layers, alternating with fat pork and bacon. Roasted peppers are cooled and served with oil and vinegar. A common main dish is made from mashed boiled beans seasoned with olive oil. Mamaliga is eaten at all meals, cooked fresh for each meal and eaten warm, though it may be used cold, or sliced and toasted or fried. Traditionally, the cooking is done by the women who spend much time on food and believe that it should look as good as it tastes. More meat, fresh vegetables, and fruits and bread may be used in *urban* areas but otherwise cooking procedures are similar.

Meal Patterns:

Rural. Three or more meals a day are usual, with not much differentiation in foods served. Fresh vegetable salads are served in summer. Workers eat cold food in the fields. The whole family eats together, the head of the house and other men being served first and then the rest of the family. In some places each person dips his spoon into the central dish.

Fast days are numerous: 4 major yearly fasts plus regular fast days, *i.e.*, 40 days each in Lent and in Advent, 4 weeks in June and 2 weeks in August, plus Monday, Wednesday, and Friday throughout the year. Thus 230 out of 365 days of the year no meat, meat products, and in some cases not even oil, are eaten. Though fish is permitted it is not always available. Often special utensils are used in preparing fast-day foods. Among the *upper classes* the fasting restrictions are not so rigorously observed.

Urban. The number of daily meals is a class point, as those who are wealthy eat more frequently: a breakfast of café au lait with bread and butter; a snack at 11:30 (which may be eaten out) lunch at 1:30; a hearty tea at 5:30; and grilled foods late at night.

Foods for Special States or Ages:

Children are given much the same food as adults. According to tradition, a pregnant woman must have what she wants to eat, otherwise she may have a miscarriage.

Beliefs and Attitudes Toward Food:

There are many sayings about food. Some express their feeling that food must be clean and "pure." They are fond of verbalizing their attitudes toward food and stress such factors as flavor and appearance.

YUGOSLAVIA

Group	Foods	How Used
I	***Cabbage,*** carrots, peppers, green beans, greens.	Cabbage as sauerkraut, also raw or cooked. Vegetables boiled, stuffed, and in soups. *Rural:* Much of the green vegetable crop may be sold for city market.
II	Tomatoes, salad greens, some citrus fruits.	Tomatoes raw or cooked with meat, fish, and other vegetables. Cabbage in slaw, green salads common, may be seasoned with chives, onions, and garlic.
III-A	***Potatoes,*** turnips, onions, beets, eggplant, cucumbers.	Potatoes boiled, baked, with sauerkraut, mashed, in soups, boiled with beans. Turnips sliced for "sauerkraut." Onions raw in sandwiches and in cooking extensively. Eggplant often stuffed.
III-B	***Apples, plums,*** pears, cherries, grapes, melons, apricots, peaches, strawberries, figs, dates, dried fruits.	Fresh fruits in season. Apples, pears, plums dried for winter. Fruits for fillings in strudel and dumplings.
IV	Milk (cow's, goat's, sheep's), yoghurt, sour cream, ***cheese*** (soft, and hard, sharp, often from sheep's milk).	Boiled milk for children and adolescents, boiled milk formula for infants. Where supply is good, adults drink fresh, fermented, and buttermilk. Cheese in cooking, baking, with pancakes, or by itself.
V	***Beef, veal, pork,*** mutton (fresh and smoked), poultry, game, salt and fresh-water fish (fresh, salted, smoked), eggs, ***beans*** of all types.	Beef and veal largely *urban.* Fresh pork at butchering, smoked at other times. Poultry "cash crop" or holiday item. Soups with meat stock for holidays. Meat stewed, roasted, ground, grilled. Fish on seacoast, grilled or in pilaf. Beans boiled, served hot or cold.
VI	***Wheat, maize,*** rye, barley, rice, buckwheat.	Wheat in bread, noodles, dumplings, baking. Maize as zgance (boiled meal). Rice in soups and stuffings. Barley in soup or bread. Buckwheat boiled.
VII	***Lard*** (tried out from "white bacon"), poultry fat, olive oil, butter.	Lard and poultry fat in cooking. Olive oil as vegetable dressing and in cooking. Butter, with bread in some areas, preferred for baking.
Beverages	***Coffee,*** beer, wine.	These beverages often luxury or *city* items. Wine for holidays. Coffee often Turkish-style.
Condiments	***Paprika, garlic,*** spices, and poppy, sesame, and caraway seeds.	

SOCIOLOGICAL DATA FOR YUGOSLAVIA

Yugoslavia is a country with marked regional differentiation in food habits and in foods used and the following material has been arranged accordingly. Space does not permit detailed information.

Sources of Food:

Rural. Most of the food used is raised by each consumer, with seasonings, etc. imported. There is considerable storage of food.

Urban. Here food is bought as needed.

Slovenia

Cooking:

Rural. Porridges of buckwheat, corn meal, beans, and rice are popular. Sauerkraut, dumplings and potatoes, and some soups are used. Dried fruits may be cooked with grain. Meat dishes, eggs, and fowl are holiday items.

Urban. Foods are prepared in similar fashion in rural and urban areas, although a larger variety of foods is available in the latter.

Meal Patterns:

Rural. Three meals a day are customary. Breakfast includes zgance with milk, buttermilk, or coffee. Dinner at noon may include sauerkraut and bread, or beans in winter, and for summer, beans as salad, and fruit. Supper consists of sauerkraut, potatoes, or soup. Instead of meat, a special dumpling is served on Friday.

Croatia

Cooking:

Zagreb District: Rural. Porridges of corn are staples, as are many kinds of vegetable soups and potatoes. Sauerkraut is prepared in many ways. Legumes are boiled with fats, and vegetables are stuffed. Much rye bread is consumed. *Urban.* Cooking shows Viennese influence. Main dishes consist of soup made with meat, meat and vegetables, or fowl. Raw salads and desserts are served. White bread as well as rye is used.

Dalmatian Coast: Rural. Italian influence predominates. Olive oil is used in cooking. Fish is popular. Soups, stews, pasta, and a plentiful use of tomatoes characterize this area. *Urban.* Cooking is more elaborate, but likewise Italian in character, and an abundant variety of foods is available, with much use of pasta and meat.

Lika District: Rural. Extensive use of dried legumes in dishes of thin consistency. Potatoes are boiled with beans or baked. Sauerkraut is cooked with pork as a winter dish. Meat and fowl are served on holidays. Rye bread is routinely used, white on holidays. *Urban.* Same methods of cooking are employed as in rural areas but more cheese and more white bread and meat are used.

Meal Patterns:

Zagreb District: Rural. Three meals a day are customary, with zgance often served at each meal and little differentiation made between meals except that meat is apt to be eaten at night. *Urban.* Three meals a day are served: continental breakfast of café au lait, white rolls and butter; noon dinner at home; a late evening meal, usually light, consisting of zgance, cheese, sausage, fruit, café au lait. When there are guests, the meal is served later and tends to be elaborate.

Dalmatian Coast: Rural. Three meals a day are served: breakfast, leftovers from night before; dinner, a main dish; supper, lighter, but often including stew. *Urban.* Three meals a day are served: breakfast, café au lait, white rolls; other meals similar to those in rural villages.

Lika District: Rural. Three meals a day are served, sometimes four in summer: a piece of bread, with coffee or hot milk, may be eaten before going to work in the fields; at 8 a.m. zgance is brought to the fields; main meal at midday with wine or meat on Sunday; for supper, in summer, dinner leftovers or zgance is used, in winter, bread or potatoes, sauerkraut, and pork. *Urban.* Three meals a day are usual. More white bread is used.

Srem and Banat-Bachka

Cooking:

Rural. White bread is a staple. Meat is used in making soup, and the boiled meat is then served with boiled vegetables. Boiled beans, and sauerkraut with pork are important dishes.

Urban. Marked Near East influence here. Main dishes include meat soups, rice with tomatoes and onions, stuffed vegetables, pilafs, grilled meats, "Eastern" desserts.

Meal Patterns:

Rural. Three meals a day, two often in the fields: for breakfast, smoked bacon, cheese, white bread; same fare for lunch with onions in spring, summer, and fall, and in winter, baked potatoes or pickled peppers; main meal at night, with main dish, soup, meat, vegetables, and bread. On Sunday, fowl, dessert, and wine are served.

Urban. Four or five meals a day: for early breakfast, coffee with coffee cake; at 10 a.m. a sandwich, bread with cheese and jelly and water; at noon a heavy dinner, customarily with wine; at 4 p.m. coffee and cakes; for supper, rolls, butter, milk, eggs, pancakes, cheese, vegetables, or salad; at 10 p.m. tea. Fish served on Friday.

Serbia

Cooking:

Rural. Cooking resembles that in other Eastern Mediterranean countries, with wheat bread and legumes featured, also salads and thick meat and vegetable stews.

Urban. Soups and stews are frequently served, also meat, either roasted, grilled, cooked with vegetables, fried, or used to stuff vegetables.

Meal Patterns:

Urban. Five meals a day: an early, light breakfast of Turkish coffee, a glass of water, and a spoonful of preserves; an 8 a.m. breakfast of coffee and white bread or coffee cake; at 10 a.m. a piece of bread with jelly and a glass of water; dinner at midday with main dish, wine, dessert; evening supper of cold cuts, cheese, salads, eggs, fruit, and milk.

HUNGARY

Group	Foods	How Used
I	***Cabbage,*** carrots, kale, broccoli, string beans, peppers.	Cabbage raw and cooked, with meat, in soup, fermented. Other vegetables boiled, steamed, in stews.
II	Tomatoes.	Raw in salads, in soups, stews, as sauce.
III-A	***Potatoes, onions,*** beets, turnips, parsnips, mushrooms, cauliflower, green corn.	Onions raw, extensively in cooking. Cooked vegetables often dressed with vinegar and spices. Potatoes boiled or cooked with other foods. Corn roasted or boiled on cob.
III-B	***Apples, pears, plums,*** cherries, peaches, grapes.	Fresh fruits in season. Sometimes in pastry. Plums dried for winter. Preserves used by *well-to-do.* Grapes for wine.
IV	Milk (cow's, goat's, sheep's), some yoghurt, ***cheese*** (from cow's and sheep's milk).	Milk boiled for small children. Boiled milk formula in *cities* when human supply fails. Cheese as such, in cooking and pastry. Cottage cheese for *peasants.*
V	***Pork*** (fresh and smoked), ***veal, beef,*** poultry, game, fish (fresh and some salt-water), ***eggs, beans,*** lentils.	Pork everywhere. *Rural poor,* smoked fat cuts, sausage, lean for holidays. Beef and veal, *urban.* Fresh-water fish common. Legumes important in *rural* areas.
VI	***Wheat,*** rye, maize.	Wheat as whole grain bread, white bread and rolls largely *urban.* White flour in dumplings, noodles, pastry. Rye bread.
VII	***Lard*** ("white bacon"), butter, goose fat.	"White bacon," goose fat on bread and in cooking. Butter on rolls and preferred for baking.
Beverages	***Wine,*** coffee, tea, chocolate, beer.	Wine favored, but luxury. Coffee as café au lait or Turkish-style. Chocolate for children or midafternoon for adults in *cities.* Beer with meals in some areas.
Condiments	***Paprika,*** spices, garlic, horse-radish; poppy, sesame, and caraway seeds; vinegar, nuts.	Paprika used to season meat, fowl, fish, and with fat on bread. Seeds in baking bread and pastry. Foods very highly spiced. Vinegar used extensively.

SOCIOLOGICAL DATA FOR HUNGARY

Sources of Food:

Rural. Much of the food used is produced at home and there is considerable drying, smoking, salting and pickling of foods for winter use.

Urban. Most of the food is bought as needed, but even in cities much fruit is canned and preserved at home.

Kitchen and Table Equipment:

Rural. Houses are usually grouped in villages, and in some areas cooking is done outdoors. Few of the houses are supplied with running water. Stoves are equipped with ovens for bread.

Urban. The more modern buildings are equipped with running water, mechanical refrigeration, and gas, coal, or electric stoves.

Cooking:

Rural. The cuisine is characterized by being highly seasoned, and when time and finances permit, it is elaborate. Meat is often stewed or roasted, and soups are well liked. Stews usually combine meat, fowl, or fish with vegetables, legumes, or noodles. Vegetables may be stewed or cooked in soups. Bread is made of dark flour with white flour for special desserts or white bread for festive occasions.

Urban. Cooking is like that of the country, but desserts appear more frequently. Much butter is used in the preparation of desserts. The *poorer class* in the city eats much the same foods as those in the country, except that they have fewer fresh fruits and vegetables because of the cost.

Meal Patterns:

Rural. Four or five meals a day are customary: breakfast of bread, smoked salt pork sprinkled with paprika, onions, with soup or an alcoholic drink optional, and sometimes a second breakfast of bread and fat is taken later; a midday meal of soup, stew with potatoes and bread, and wine if it can be afforded; a late afternoon snack of bread, salt pork, sour milk and perhaps pastry; and a supper usually of eggs or cold smoked meat, raw vegetables, bread, and wine. Catholics do not eat meat on Friday.

Urban. Four or five meals a day are customary; a continental breakfast of rolls and café au lait; a midmorning breakfast of eggs, smoked meat, rolls and butter with coffee; dinner at noon including soup, stew, or other main dish, bread, potatoes, dessert, and wine; coffee and pastry in late afternoon; and supper of eggs, cold smoked meat, or cheese, salad, bread, dessert, and wine.

Food for Special States or Ages:

Not many differentiations are made. Children are given tidbits as an expression of affection on the part of adults. According to folk belief, a pregnant woman is thought to show the sex of her unborn child by her cravings; if sweets are desired, the child will be a girl; if bacon, a boy.

Beliefs and Attitudes Toward Food:

Hungarians have many sayings to express their feelings with reference to food. The ties between godparents and the parents of the godchild are very strong and there are special ways of showing these ties by means of food and special meals. Important events in the life cycle are celebrated with different kinds of feasts, as are holidays.

CZECHOSLOVAKIA

Group	Foods	How Used
I	***Cabbage,*** carrots, kale, spinach.	Cabbage as sauerkraut (*Bohemia*), as slaw, boiled. In *Slovakia* more vegetables, boiled or raw in season with sour cream.
II	Tomatoes, citrus fruits.	Raw, in cooking, especially *Slovakia*. Citrus fruits an *urban* luxury item.
III-A	***Potatoes,*** turnips, mushrooms, beets, parsnips, cauliflower, leeks, celeriac.	Potatoes usually plain boiled, or with sour cream. Root vegetables boiled. Mushrooms in soup, with meat or as garnish.
III-B	***Apples, pears, cherries,*** plums, berries, grapes, apricots, some imported dried fruits.	Fresh in season, some preserves. Dried fruits used in baking or as garnish. Wine in *Slovakia*.
IV	***Milk*** (cow's), fermented, buttermilk, ***cheese*** (soft and mild, from sheep's milk) in *Slovakia*.	Fresh milk for children and some adults. Buttermilk and clabber preferred. Boiled milk formula or dry or evaporated for infants in *urban* areas. Soft and hard cheeses in baking and dumplings.
V	***Pork*** (fresh and smoked), beef, veal, poultry, game, eggs, fresh-water fish, ***lentils,*** yellow peas, kidney and white beans.	Fresh pork, smoked ham, sausage, organ meats favored. Eggs in cooking and baking. All legumes important, boiled, in soups, stews, and as relish.
VI	***Rye, wheat,*** maize.	Sour rye bread with caraway seeds and white flour for pastry and dumplings in *Bohemia*. White rolls in *cities*. Wheat bread and some maize mush in *Slovakia*.
VII	***Lard,*** "white bacon," butter, poultry fat.	Lard in cooking, "white bacon" with bread. Poultry fat on bread and in cooking. Butter preferred for baking.
Beverages	***Coffee,*** cocoa, ***beer,*** wine.	Coffee or substitutes used frequently throughout day by *Czechs*, who also drink much beer. Wine preferred by *Slovaks*. Cocoa in *urban* centers.
Condiments	Dried mushrooms; caraway, poppy and sesame seeds; spices, garlic, honey, nuts.	Dried mushrooms most important in *Czech* cookery. Seeds in baking, to fill pastry, and as seasoning. Nuts and honey in baking. Garlic and paprika used by *Slovaks*.

SOCIOLOGICAL DATA FOR CZECHOSLOVAKIA

Regional distinctions between Bohemia, where the Czechs live, and Slovakia are rather marked.

Sources of Food:

Rural. Most of the foods used are produced at home, with the exceptions of seasonings and coffee, which are bought.

Urban. The food is bought as needed.

Kitchen and Table Equipment:

Rural. Ordinarily stoves burning wood or coal are used. Much of the food is dried for winter and kept in bags; such items as sauerkraut in crocks.

Urban. There is much modern housing with up-to-date equipment in the large cities.

Cooking:

Rural. Cooking in *Bohemia* is time-consuming, with much emphasis on pork (fresh roasted or boiled on Sunday, preserved on other days), dumplings, potatoes, sauerkraut, beer and coffee for the main meal. Filled pastry is popular. In *Slovakia* there is a marked Mediterranean influence, with greater use of dairy products, beef, wheat, fresh and raw vegetables, and wine, and only occasional dumplings. Friday and Lenten abstention from meat is observed.

Urban. Here there is greater use of dairy products and fresh fruits and vegetables.

Meal Patterns:

In *Bohemia* four or more meals a day are eaten: breakfast, which includes coffee; for dinner, a main dish, dumplings, sauerkraut and pastry, with beer and coffee; svačina—at 5 p.m. coffee and pastry; followed by supper several hours later. Goose is eaten extensively in the fall and is a holiday food. Carp also is a holiday item.

In *Slovakia* three meals a day are usual: black bread and maize meal porridge frequently for breakfast; midday dinner of soup with noodles and vegetables, sometimes meat or cabbage with gravy; for supper, potatoes with sour milk, or corn meal with sour milk, or, in season, vegetables with sour cream, milk, or cottage cheese. Sheep's milk cheese (brindza) is a favored luxury. Fresh fruits and vegetables are much relished, and pastries and white breads are holiday fare to be eaten on saints' days, at church festivals and the like.

Foods for Special States or Ages:

Children are given milk and soft foods until they are about three, when they gradually begin to eat what the others are served. In the *cities* increasing attention is paid to modern methods of child care and feeding.

Beliefs and Attitudes Toward Food:

The people of Czechoslovakia enjoy their food very much and talk about it, but they do not indulge in food fantasies to any extent.

POLAND

Group	Foods	How Used
I	***Cabbage,*** sorrel, kale, spinach, peas, carrots, string beans.	Cabbage raw, as sauerkraut, in soups with or without sour cream. Sorrel in soup with sour cream. Other vegetables boiled or steamed with meat.
II	Tomatoes, lemons.	Tomatoes in soups, sauces, or raw. Lemons as condiment in *urban* areas, other citrus fruit a luxury.
III-A	***Potatoes,*** onions, beets, cucumbers, radishes, leeks, parsnips, mushrooms.	Potatoes boiled, fried, and in soups. Beets in soups, boiled and pickled. Cucumbers, radishes, scallions raw, often with sour cream. *Rural:* Potatoes nearly every meal. Fresh raw vegetables in season, root crops stored for winter use. *Urban:* Fewer potatoes, greater variety of other vegetables.
III-B	Apples, pears, cherries, plums, all kinds of berries.	Fruits raw, stewed, in soups, pastries, and cakes. Preserves and jams as sweetening in tea, or in cakes and pastries.
IV	Milk (cow's and goat's), ***sour cream*** and ***milk,*** cottage cheese, some other fresh and dry cheese.	Fresh milk for children and in kasha. Sour cream in soups added just before serving, also with vegetables and in cooking meats. Cottage cheese with sour cream and in baking.
V	***Pork,*** game, poultry, beef, veal, eggs, fresh-water fish (salted, dried, also pickled herring), Lima beans, split peas.	Meats boiled, stewed, fried, cooked with vegetables, all parts used. Eggs hard-boiled or in cooking. Fish often boiled. Legumes in soups and boiled. *Rural:* Meat a luxury, not used daily. Eggs a "cash crop" rather than for home use. *Urban:* More meat, eggs, and fish.
VI	***Rye,*** wheat, buckwheat, oats, millet, barley, rice.	Sour rye bread most common. Buckwheat, oats, millet, barley, rice in soups or boiled as thick mush (kasha) or baked as main adjunct to meat. *Rural:* White bread a luxury, boiled grains staple food, maize meal in South. *Urban:* More white bread, other grains less important.
VII	Lard, "white bacon," poultry fat, suet, butter, and flax, hemp, sunflower, and rapeseed oils.	Butter preferred for baking, rarely on bread or with vegetables. Animal fats with potatoes, grains, and in cooking. Vegetable oils for frying. *Rural:* Butter a "cash crop" and used sparingly. "White bacon or poultry fat with bread." *Urban:* More fats used.
Beverages	Tea, coffee, beer, wodka.	Tea served weak with loaf sugar, sometimes with lemon, milk, or preserves. Beer and wodka usually drunk by men. *Rural:* Tea and coffee luxury items. *Urban:* More tea, coffee as café au lait.
Condiments	Dried mushrooms, poppy seeds, dill, horse-radish, vinegar, pickles, caraway seeds, nuts, pepper, citric acid.	Mushrooms in soup, with meats or grains. Seeds in bread and pastry. Dill in pickles and with meats and fish. Vinegar in cooking, with vegetables. Citric acid in soups.

SOCIOLOGICAL DATA FOR POLAND

Sources of Food:

Rural. The bulk of food is home-produced, the remainder from the market towns, for rural Poland is organized on the village plan. Tea, coffee, spices, sugar, salt, etc. are bought or traded in the market.

Urban. The chief source of food is the store or market. In big cities, shopping is done every day, and in smaller ones on the local market day.

Kitchen and Table Equipment:

Rural. Few houses have running water, most of it being supplied from wells. The stove, usually tile, burns wood, and the cooking vessels are of copper, brass, or iron. Food is kept in crocks, bags, and chests. Eating utensils are of wood, pottery, or metal, and are few in number.

Urban. In some of the smaller cities the tile or charcoal stove is in common use, while in the larger centers more modern types of equipment are available. Running water, too, is in use in all types of communities but modern refrigeration is not common. Cooking utensils are of iron, tin, copper, enamel; some aluminumware. Table equipment is more elaborate, and in the *middle* and *upper classes* includes much linen and silver.

Cooking:

Rural. Frying, boiling, and stewing are the most favored methods of cooking, which traditionally is the task of the mother of the house. Bread is baked at home, and dough containing the leavening agent may be kept from each baking to start the next batch, as is customary in other parts of Europe. For special occasions cakes and pastries are made, either sponge cakes or with yeast as the leavening agent. Pierogi, a dough mixture filled with meat, vegetables, or fruits, is very popular. Noodles and dumplings are also important.

Urban. The same cooking techniques apply as in the rural areas, plus a wider use of canned goods. Soda and soured milk are coming into favor as leavening agents in baking. Bread is often bought.

Meal Patterns:

Rural. Three meals a day are usual. In the summer, dinner is eaten at night, while in winter it may be eaten at noon. Often not much differentiation is made in the types of foods served at all meals. Potatoes and various types of kasha may be eaten at all three. Soups are popular—cold soups in summer, made of vegetables with sour cream. If meat is available, it is served on Sunday, and pork and poultry are favored. Ham or sausage for Christmas, eggs and special cakes at Easter, and goose or duck in the fall are festival foods. Meat is not eaten on Friday.

Urban. Three meals a day are eaten. White rolls and coffee or chocolate are served for breakfast. Restaurants are well patronized, although working people may go home for the midday meal. Casual entertaining in the home, too, is more usual.

Food for Special States or Ages:

Rural. Very few differentiations are made. Children are given milk, but not much special attention with respect to food; they must be polite and appreciative at the table. Pregnant women are expected to have what food they desire, or, it is believed, the child will be marked. Eggs and chicken broth are "beneficial" for invalids and the aged.

Urban. Evaporated milk was popular for infant feeding before the war, and the wealthier and better educated groups had begun to adopt scientific methods of infant and child care.

Beliefs and Attitudes Toward Food:

Bread must be respected and always placed on the table topside up, and not a crumb wasted. In some places a menstruating woman is thought to harm bread dough or the brewing of beer. Etiquette demands that guests be invited to eat, and that any drink be offered with the right hand, while the guest is under obligation to thank the host.

VITAMIN B COMPLEX STUDIES ON THE CALIFORNIA AVOCADO[1]

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THE California avocado, a subtropical fruit with a high-fat content, is rapidly gaining in importance as a component of the American diet. In other articles to be published shortly, the authors have reported an investigation on the nature of the fat-soluble vitamins of the avocado. The present study is concerned with the content of certain of the water-soluble vitamins.

Weatherby and Waterman (1), in feeding experiments with rats, found that the avocado is a good source of both the heat-labile and antineuritic factors. Santos (2), in 1922, found that avocado is fairly high in vitamin A. Day and Darby (3) compared the growth effects of avocado to that of other fruits and stated that apples and oranges contain little vitamin G, while avocado and pears are better sources.[2] With the development of microbiological methods to include determination of several of the B complex factors it was thought desirable to elaborate upon the findings already published by a further study of these factors in the avocado. In the present study riboflavin was determined by the microbiological method of Snell and Strong (4) and by a rat assay method using a diet supplemented with synthetic vitamins as the sole source of the B complex (5). Pantothenic acid was assayed by the method of Strong, Feeney, and Earle (6). Niacin was determined by the microbiological method of Snell and Wright (7). Biotin was assayed by the method suggested by Snell and Wright (7) using *L. Arabinosus* as the organism.

TABLE 1

Vitamin content of avocado

VITAMIN DETERMINED	METHOD	CONTENT	VALUES BY OTHER AUTHORS
		mcg./gm.	*mcg./gm.*
Riboflavin	Microbiological	1.5	1.5*
Riboflavin	Bio-assay	1.8	—
Pantothenic acid	Microbiological	2.5	—
Niacin	Microbiological	11.3	9.27† 10.20 9.73
Biotin	Microbiological	0.10	—

* Value determined in a commercial laboratory, method unknown to authors.

† Values reported by Russell, Taylor and Beuk (8).

EXPERIMENTAL

Microbiological Procedure. The samples for microbiological assay were prepared by weighing 10 gm. of the edible portion into the micro cup of the Waring Blendor and blending for one minute with 100 ml. water to disintegrate the tissue thoroughly. The whole mixture was then transferred to an Erlenmeyer flask and autoclaved 15 min. at 15 lb. pressure. The pulp was removed by filtration and washed with distilled water; the filtrate was transferred to a separatory funnel and extracted three times with ether to remove fatty material (9). The extracted material was diluted to volume and assayed by adding varying amounts to the assay tubes. These tubes, together with tubes containing standard vitamin solutions, after proper inoculation were incubated 72 hr. at 37°C. The response was determined by titration with N/10 NaOH using bromthymol blue as indicator. Results of the various assays are shown in Table 1.

Comparison of B complex values for other fruits and vegetables with avocado is given in Table 2.

[1] Supported by a grant from the Avocado Growers of California. Received for publication February 10, 1944.

[2] While this work was in progress, Russell, Taylor and Beuk (8) reported the niacin content of 8 different fruits, and of these avocado gave the highest value.

Rat Bio-Assay for Riboflavin. Twenty-one day-old rats were placed on a depletion diet of the following composition: Vitamin-free casein (SMA Corporation) 22.0 per cent, cystine C.P.O. 3 per cent, Sure's salt mixture 4.5 per cent, sucrose 73.2 per cent. A vitamin supplement was added to the above diet so that each kilogram contained: thiamin 5 mg., pyridoxine 5 mg., nicotinic acid 100 mg., calcium pantothenate 100 mg., choline HCl 1 gm.; p-aminobenzoic acid 150 mg., inositol 400 mg. In addition, each rat received a daily supplement of 0.25 mg. alpha-tocopherol, 5 U.S.P. units vitamin D, 50 U.S.P. units vitamin A, and 6 drops corn oil. The rats were continued on a depletion diet 30 days at the end of which they were depleted. They were then divided into groups according to weight, sex, and litter and fed the supplements indicated in Table 3 for 21 days, at which time the average daily gain was calculated. The results are shown in Table 3.

TABLE 2

*Vitamin content of some common fruits and vegetables**

FOOD	RIBOFLAVIN	PANTOTHENIC ACID	NIACIN	BIOTIN
	mcg./gm.	*mcg./gm.*	*mcg./gm.*	*mcg./gm.*
Cabbage, raw	0.57	1.8	2.1	0.024
Spinach, raw	2.3	1.8	5.1	0.069
Lettuce	0.27	1.1	2.5	0.031
Oranges	0.47	3.4	3.0	0.019
Apples	0.18	0.6	0.81	0.009
Bananas	0.56	1.8	5.8	0.044
Strawberries	0.34	2.6	2.2	0.040
Tomatoes	0.37	3.7	4.7	0.040
Carrots	0.50	2.5	2.6	0.025
Avocado	1.5	2.5	11.3	0.10

* Values based on "Studies on the Vitamin Content of Tissues II," Publication No. 4237, University of Texas, 1942.

TABLE 3

Rat growth response to avocado and various levels of riboflavin under riboflavin assay conditions

GROUP NO.	DAILY SUPPLEMENT	AVERAGE DAILY GAIN
		gm.
1	Negative control	0.98
2	2.5 mcg. riboflavin	1.73
3	5.0 mcg. riboflavin	2.27
4	10.0 mcg. riboflavin	2.83
5	1.88 gm. avocado	2.00

SUMMARY

Some factors of the vitamin B complex have been determined, using microbiological methods, and in the instance of riboflavin an additional check has been obtained by rat assay. It was found that avocado is a good source of all the B factors tested, the niacin value being particularly high.

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MANIZA MOORE

President of the American Dietetic Association

Editorial

MANIZA MOORE, PRESIDENT OF THE AMERICAN DIETETIC ASSOCIATION

There is a saying that "all good Americans, when they die, go to Paris"—soon again, we hope, to be that city of light and gaiety beloved by all. And by the same token, all good Yankees, if they would but admit it, look upon the Old South as a land of romance and cultured gentility, productive of a people to whom hospitality and ability to enjoy life are second nature.

It is especially pleasing, therefore, to introduce the incoming President of this Association, Maniza Moore, as a true native of the South, and the second in twenty-three years to break the line of northern successors to the office. She has an authentic southern heritage, for both sides of her house were present and accounted for in the "War Between the States" and she grew up from infancy on a Mississippi farm which in the South is properly termed a plantation.

Family tradition had foreordained, of course, that the only ladylike career for ambitious young Maniza was that of teaching. And so she majored in Latin at Mississippi State College for Women. However, Miss Moore soon decided that dead languages were not her métier and resolved to forego Ancient Latin for a living science—Nutrition.

Away to the North she went, to the Universities of Colorado and Wisconsin, where she armed herself with the credits necessary for entrance to a Yankee stronghold—the training course for dietitians at Peter Bent Brigham Hospital, Boston. Evidently Miss Moore felt that New England needed her and she must have liked New Englanders, for she remained there as Head Dietitian for fourteen years—three at Grace Hospital, New Haven, and eleven at Beth Israel Hospital, Boston. But she lost not a whit of that Deep South accent, even though surrounded by the Boston influence for so many years.

Miss Moore has directed two approved training courses for dietitians—at Beth Israel Hospital, and since 1940 at Vanderbilt University Hospital, where she is Director of Dietetics. She is a past president of two state dietetic associations, Massachusetts and Tennessee. Members who attended the 1936 Boston meeting of the Association will recall Miss Moore as chairman of local arrangements and therefore largely responsible for the success of the meeting. Her ability as an administrative dietitian has been amply attested not only by her record as head of the dietary department in four hospitals but also by her appointment as chairman of the Association's Administration Section for 1942–43.

With the postwar period of readjustment just ahead and the manifold problems that will be presented for solution, the Association is fortunate in having Maniza Moore as President. Her personality can be characterized as energetic, intelligently purposeful, courageous, and soundly balanced. Thus, the wisdom with which another President has been selected, the Association's twenty-first, is again affirmed.

DIETITIANS IN WARTIME FEDERAL SERVICE

A message from the United States Civil Service Commission to those available for Government jobs

A Student Dietitian in a Government hospital concerned with the rehabilitation of the returning soldier writes, "As 'Johnny Comes Marching Home' the dietitian who wishes to serve her country might well consider the possibilities of service in one of the various hospitals which will be caring for our men and women upon their return home. This is not a spectacular service. It calls for true fortitude because the patient who comes to us is having his first taste of defeat. He is often facing a long trying period of hospitalization through which we must help him. It may even last for years. The returning veterans will be ill and tired. They will be hungry not alone for food, but for all of the little things of life with which they have been out of touch and which go to make up our American life." One of the Head Dietitians in a large mental hospital writes, "To get our service men back into production, to engineer self-confidence and self-reliance, is the part of all those who work in Government hospitals. This work is rehabilitation here and now."

The dietitian has been trained to be of service to mankind both in war and peace. Today her profession is faced with the greatest challenge of its existence—the feeding of our sick and wounded soldiers and the rehabilitation of our veterans. To prepare appetizing food, adequate in amount and kind in spite of any food shortages, is the primary task which confronts dietitians and one which calls for the exercise of all their ingenuity and imagination.

There are no situations that require more initiative than those arising in the large dietary departments of government hospitals. The federal Government employs more civilian dietitians than any other employer in the country. They are in addition to the many hundreds who are commissioned officers attached to the Medical Department of the United States Army. There are 357 graduate dietitians employed in the 124 hospitals of the Veterans Administration, U. S. Public Health Service, and the District of Columbia.

Government hospitals train over one tenth of the entire number of students who enter hospitals for their year of dietitian training. Of the 900 student dietitians trained each year in the United States, approximately 125 of them receive their training in five Government hospitals. Most of these young women advance to positions in the Medical Department of the Army as commissioned officers.

There is a desperate need for Staff Dietitians in the Veterans Administration Facilities, and the U. S. Public Health Service hospitals throughout the country. The present difficulty in recruiting Staff Dietitians for these agencies may be due in part to the diversion of dietitians into the fields which at times are quite unrelated to professional dietetics, as well as to the Army's enlistment of dietitians. These conditions make it increasingly difficult for the Government to maintain the prewar standards in selecting its dietitians. In view of the large number of civilian dietitians employed by the Government, any lowering of the standards through which they are selected will have a decided influence on the entire dietetic profession. There is work to be done, food to be bought, there are patients to be fed, diets to be calculated, and employees to be trained and supervised. 'When there are not sufficient qualified dietitians available, persons less qualified must be recruited. It is necessary in certain emergency situations for agencies to appoint and the Civil Service Commission to approve persons whose qualifications do not meet the full professional standards. It is hoped that this is only a temporary measure and that replacements may be made with persons whose backgrounds indicate that they are fully equipped to meet all the

problems presented by large hospital dietary departments.

The U. S. Civil Service Commission is recruiting trained hospital dietitians whose experience has included work in (a) diet therapy, (b) planning adequate menus, (c) supervision of employees in food preparation and service, (d) ordering food supplies and equipment, and (e) food cost control. There are no age limits and no written tests for these positions; the greater number of vacancies will occur in hospitals of the Veterans Administration and the United States Public Health Service.

In conformity with regulations governing all appointments to the Government service, dietitians are appointed for the duration of the war and not to exceed 6 months thereafter. However, the need for food specialists in Government and industry will continue long after the cessation of hostilities and undoubtedly there will be opportunities for permanent employment. Further proof of opportunities for employment in this field is contained in the new Veteran Preference Act of 1944 (G.I. Bill of Rights) in which provision is made for a tremendous expansion in hospitals to provide for the treatment and care of our returning soldiers and veterans.

The following questions and answers may be of interest to the dietitian who is about to select her place in the war program.

How do salaries for government dietitians compare with the salaries of non-government dietitians? The entrance salary for graduate dietitians in government hospitals compares favorably with that paid in private hospitals: non-government dietitians receive an entrance salary of from $110 to $130 a month plus maintenance. The entrance salary paid to government Staff Dietitians is $150 a month plus overtime pay of $390 a year. At the end of a year's experience, persons are eligible for advancement within the service to Head Dietitian at $166 a month plus overtime pay of $433 a year. Both of these salaries are subject to deductions for maintenance which is approximately equivalent to the overtime paid a year. The next advancement is to Chief Dietitian at an increase of $25 a month. In addition, there is an in-service promotional policy which provides for a $60 to $100 a year increase for every 18 months' satisfactory service. Top salary for dietitians is $3,200 per year plus overtime amounting to $628 a year.

Do government hospital dietitians have administrative responsibilities or are they bound by red tape? The Chief Dietitian in a Government hospital holds a position second or third only to the institution's director. There are few women executives in business holding positions of equal authority. Staff Dietitians, under the supervision of the Chief or Head Dietitian, have charge of the preparation and service of food from a main kitchen or supervise the preparation and service of specific diets and service of regular diets in wards, or perform a combination of both. They also cooperate with physicians on the dietetic treatment of patients; give diet instructions to patients; plan menus under direction; and perform similar duties.

What inducements do government hospitals offer dietitians? Government hospitals offer varied phases of diet therapy which should be of interest to a dietitian. Other inducements worthy of consideration are the hours and the monetary allowances; vacation time; sick leave; and provisions for retirement benefits.

With the knowledge of the important part food has to play in our sick and wounded soldiers' return to health and activity, the dietitian can find but one answer to the question, "How can I best serve my country and help speed victory?" Dietitians and those interested in entering this profession have jobs awaiting them today in government hospitals. Interested persons are urged to consult the Civil Service announcements at first and second class post offices, Civil Service Regional Offices, or write the Civil Service Commission, Washington 25, D. C. Applications should be filed with the Commission in Washington.

THE DIETITIAN SERVES IN A GLOBAL WAR

From the distant islands of the South Pacific, the arid plains of Africa, battle-torn Italy and France and the China-Burma-India Theater of Operations, letters continue to come in from Army dietitians. Cheerful enthusiasm and energetic purpose characterize these letters, for the writers appear to be undaunted by the difficulties or the dangers which attend proximity to the battle zone.

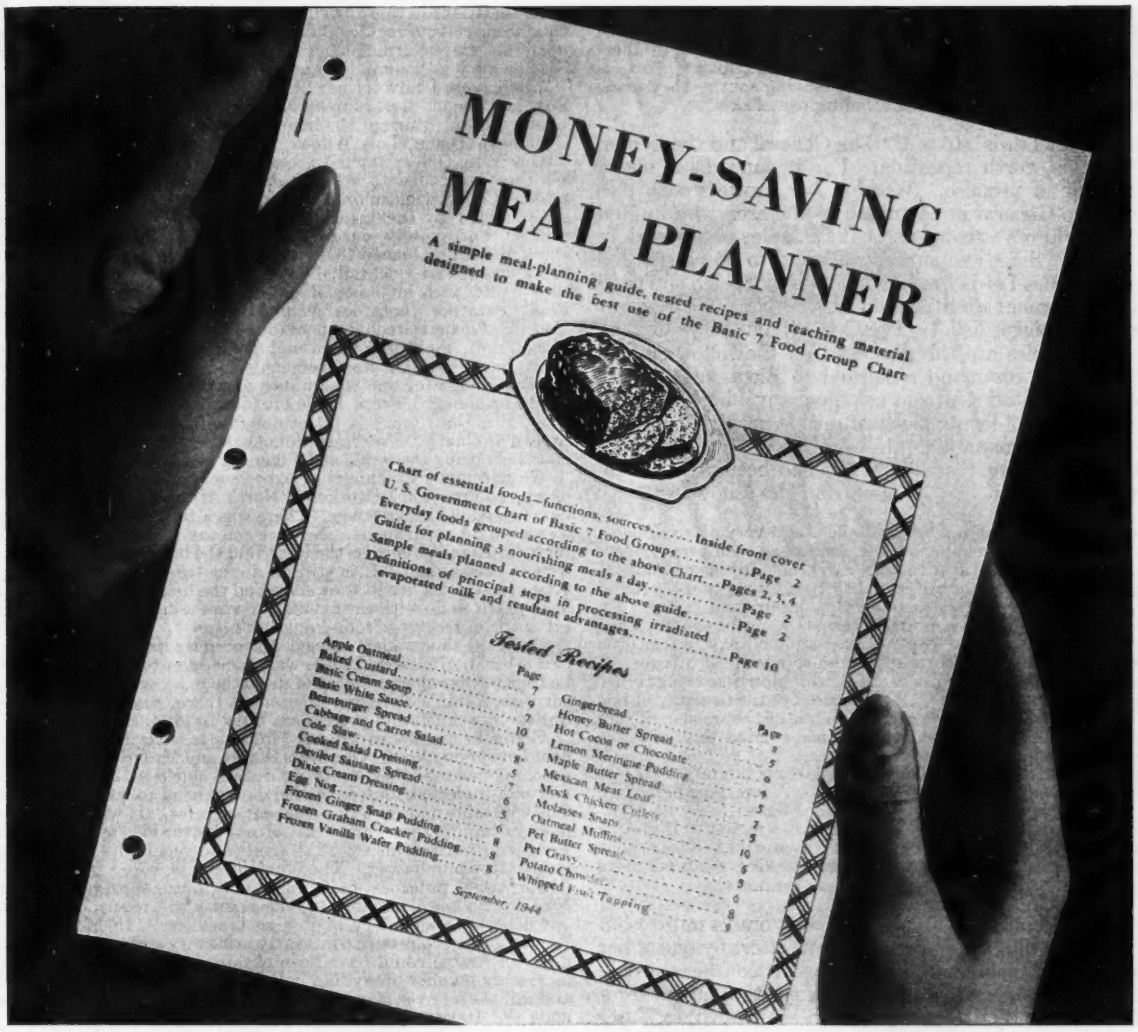
One, Ruby Motley, served at Corregidor and is now a prisoner of war. Word has come through, however, of her unusual ability to provide trays of hot and appetizing food to the wounded and sick under conditions undoubtedly more dreadful than any that have ever been experienced by an Army dietitian.

Another, Lt. Kathleen Lewis, formerly chief dietitian, Johns Hopkins Hospital, has been in the South Pacific war zone for over two years. From that area she wrote as follows at Eastertime:

> Easter dawned clear and bright, with a lovely blue sky full of "little clouds and wisps of mist [which] run bleating up and down the valleys and the hillsides like lambs looking for their mother." I arose at 5:30 for sunrise service at 6. There was a large congregation, if you can ethically call a collection of pajama-clad males and sweater-clad females a congregation.

But a good dietitian never wanders too far afield from food and Lieutenant Lewis went on to comment:

> For breakfast we enjoyed broiled ham and hot muffins and then off to the day's work. The patients had baked ham for dinner and potato salad fabricated from real potatoes which are a luxury after so many dehydrated ones. The Red Cross furnished varicolored paper eggs for the trays—so the day was quite festive.
>
> As I came home from lunch there were a great many tiny sailboats inside the reef skimming over the blue, like gulls floating before the wind. In the evening Colonel S. showed up with the little radio which had been in for repairs—so we sat under the fig tree and listened to XXXX and the Easter music from the "United States of America." An Easter moon appeared—on the wane, but quite befitting the day—it was egg shaped and pale orange as it rose through a hazy bank of clouds low on the horizon, emanating rays of gold and silver in all directions (like the Jap "rising sun," only prettier) and reflecting them on the masses and "little wisps" of clouds which hung above. . . . Some nights there are several nebulae visible, as well as skyrocketing stars which, because of their added brilliance, seem like real rockets at times. As Rupert Brooke says, it "is like nothing else in this world or the next."
>
> Had a very enjoyable dinner recently and a rarely interesting evening of intelligent conversation with a Colonel who was born and raised on the island. The dinner was not unusual except for the *duruka*, the native asparagus. It doesn't taste like ours but resembles it as to shape. The flavor is quite like French artichoke hearts. In reality it is the unopened flower bud of a wild type of sugar cane which grows in swampy places. The natives cook it in cocoanut milk, which is made by grating cocoanut into a basin, covering it with water and squeezing the cocoanut gratings like a sponge until a fair quantity of "milk" is produced. Most of the locally grown vegetables are cooked in this milk and it definitely enhances their gastronomic attractiveness and palatability. The tendency among the natives here, as in Chinese cookery, is to undercook, rather than overcook, vegetables. The old Army cooks, I regret to say, still have to be beaten to a mush before they learn that the same treatment is *not* for vegetables!
>
> The bird life on the island has been somewhat of a disappointment to me, for with the tropics I have always associated flocks of brilliantly colored and large birds—parrots and their relatives. There are some small bright birds about, however, and the inhabitants say there are parrots and parakeets in the bush but I have only seen one of the latter so far. One of the most interesting birds here is the *mynah*. His head is coal black and his feet, legs, bill, and a narrow strip around his eyes are bright yellow. This eye accent gives him a masklike appearance and makes him look as devilish as he is. His antics are very crowlike. A great deal of the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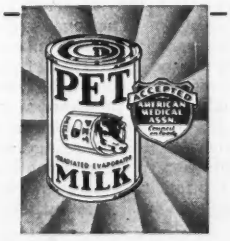

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(Fill in completely. Offer limited to residents of Continental U. S.)

time he perches on the backs of cows or horses and it is not uncommon to see four or five sitting on one poor animal's spinal column. The theory is that he is a great flycatcher, too, and the livestock welcome his parking system. The other evening a pair of them were sitting on a horse in a nearby field—with the tips of their tails together, one looking north, the other looking south—they made a perfect V for Victory, against a fading pastel sky.

Lieutenant Lewis' story of "The General and the Lemon Pie," too, is worth repeating. For it concerns a pie of parts, a pie of promise. Word of her prowess with pies reached the General in command of the area who invited Lieutenant Lewis to come and bake samples of her work in his kitchen. Since evaporated milk had to be substituted for cream, Miss Lewis first made a test pie which she tried out on convenient dietitians and then "set forth to strut my stuff for bigger fish." The General and other visiting military notables ate the pies, and on the following day the Colonel in command remarked to Lieutenant Lewis, "The Chief of Staff says you can have anything you want after that show of lemon pies you put on for him!"

Second Lt. Eugenia L. Andrews wrote in July, also from the Pacific Theater, that life for her had been most eventful, which indeed it had, judged from the following:

There is a great deal of work to do here and very often little to do with. Our mess personnel is and always has been very cooperative. They are always willing to carry out any suggestions I make. I can very truthfully say that I enjoy my work. Aside from the work, the country is really very interesting. There are heat, rain, mud, mosquitos, and ill-fitting G.I. clothes—but on the other hand there are the beautiful star-studded sky, warm blue water lapping lazily over coral reefs, and soft tropical breezes.

Perhaps you saw my picture in the Washington *Star* rotogravure section several months ago. I was pictured in the doorway of our mobile kitchen while we were serving on one of the wards. There was a mistake in names and the picture carried that of Alice Radcliffe, our physiotherapist.

I was married on June 1 to Lt. Dan J. Macer of our unit. He was formerly Mess Officer and later Adjutant. A few days before we were married he was assigned to a forward base.

I am happy that our Army status is at last a reality. It gives a much greater feeling of security—but, I was gratified to learn that the gold bar was not necessary to make working relations more pleasant here in this zone than they were formerly.

Second Lt. Lockie Cox made such a favorable impression with her work that she inspired a poetic effort by one of her patients, which commenced as follows: "You hear people praise the Army, Navy, and the Marines too; but never a word about the dietitian and the job she has to do," and proceeded with ever-increasing enthusiasm to this final fervid conclusion: "Because a dietitian in this man's army has a whale of a big job to do!"

From New Caledonia, Second Lt. Mable M. Soderholm wrote:

I thought you would be interested to know that the dietitians who are on New Caledonia held their first professional meeting on April 28, 1944, in connection with the monthly medical meeting. We found our problems were much the same, although at times it does not seem as if anyone could have the difficulties which come up day after day. Since our hospital has had a dietetic department longer than any of the others, we tried to help the more recent arrivals. We may have given them a few ideas; nevertheless, they gave us some helpful suggestions also.

One of the dietitians, Miss Hill, is from New Zealand and is on duty in their general hospital. She is the hardest working member of our group, I believe. She is so enthusiastic about everything that it is exciting to be with her. Her education and training have been quite different from ours, but at present the young women who are taking dietetics in New Zealand receive an education almost identical to ours.

We are planning to have these meetings once a month and are certain that they will be very helpful.

Another gathering of dietitians in a far-off land was described by Lt. Ruth I. Hilfman:

Parties overseas are not a rarity, but dinner parties are, and a dietitians' dinner party probably unheard of. We dietitians here at the —— General Hospital decided we would like to meet the other dietitians in this immediate area. We asked them all to join us at dinner at our regular Officers' Mess, but when our Mess Officer heard about it he arranged a real party for us. Our sergeants also became very party-minded and did their best to please.

There were twelve of us: Lts. Kathleen Creech and Catherine Fox, and Second Lts. Martha Kitchen, Agnes Walish, Jean Wirt, Louise Riley, Marian McGregor, Helen Davis, Jessie Levin, Genevieve Tyson, Lola Wilcox, and myself.

Our Mess Officer started the good cheer by serving cocktails. We then proceeded to a long table ordinarily used as a serving table. Contrasting colored Italian chairs of red, blue, orange and green added to the color arrangement. Our tablecloths were sheets. Fortunately, our Medical Supply had just received some china dishes and loaned them to us along with some glasses. Our menu was: Fruit Cocktail, Filet Mignon (our butchers did what they could with an issue of boiling and stewing meat), Home Fried Potatoes (potatoes were canned), Buttered Peas (also canned), Pickled Green Peppers (our Italian kitchen help did their share here), Pickles, Endive and Escarole Salad, Parker House Rolls (made by our staff sergeant and delicious), Butter (we receive enough for one meal a day plus cooking, but managed to scrape up enough), Fresh Apple Pie (another sergeant did well with this), Hot Doughnuts (a bit of dough left over from the rolls, a superb product). Everyone pronounced it the best meal they had had since being overseas, and I can say it did taste mighty good.

We had many exchanges of experiences and problems. All of us who had previously worked in North Africa agree that our work here has added importance. There was a time we wondered if we weren't a bit superfluous. Now we can say there is a definite role for a dietitian in overseas theaters, and the more we have the more we can accomplish. It is still no doubt true that the particular type of patient a hospital receives and the location of the hospital have much to do with the amount of work a dietitian has, and the satisfaction received from doing her bit.

Until the time we left French Morocco we had met only one or two other dietitians and there were none in our area. But on our last sea voyage there were six of us on the passenger list and, to our surprise, a ship's dietitian, Lieutenant Insco, who enjoys her ship duties very much and prefers sea duty to land.

Going to market in French Morocco is something a dietitian could never do alone. Our Mess Officer and Mess Sergeant always accompanied me. We used to purchase chickens, somewhat anemic and underfed, but nevertheless chickens to vary the menu. The vegetable market was a pleasant surprise. It was a well-kept modern building similar to any of our better city markets. The French authorities inspected all fruits and vegetables and checked items after purchasing. The chief products were turnips, cauliflower, sweet potatoes, radishes, onions, oranges and tangerines. No one who has experienced overseas duty will return home without a better vocabulary of foreign languages. In Morocco the French guide books were constantly necessary and we often wished a few in Arabic could have been obtained. In Italy we have an increasing number of civilian helpers. We have learned to count and call the number of servings for cart loading in Italian, and just hope the Italian boys understand us.

We were in North Africa during the hunting season and our officers and detachment men took advantage of this to the benefit of all. On several occasions wild boar meat was served. Most of us had never tasted this meat in the past nor had we prepared it. Like any wild game it was best prepared according to the sweet-sour method, and well liked. There were also a number of individual dinners served from pheasant. Right now there is neither the time nor the place for hunting, so we continue along with our daily issue of C rations.

One of the guests at the above-mentioned dinner party, Second Lt. Agnes Walish, wrote as follows concerning the business accomplished at the informal meeting:

The need for a representative of the group was apparent, and this was acknowledged as the most important business of the meeting. A temporary position was created with the condition that a permanent representative would be nominated and elected at one of the future meetings. The duties of the representative would be to contact proper authorities concerning specific problems, discuss and arrive at some decision, unbiased and equally favorable to all concerned. After this business was accomplished, smaller groups were formed and individual dietary problems were discussed. Generally speaking, the meeting was most satisfactory and before it ended, plans were formulated for ensuing meetings to be held on the second Tuesday of every month. Each hospital will participate, probably due to the fact that the wholehearted cooperation which was so in evidence was stimulating to all present.

A WINNER on the Breakfast Menu!

POST'S 40% Bran Flakes are a *natural* winner at breakfast time. One reason for this is the delightful flavor of these golden-brown bran flakes.

Another reason—even *more* important to dietitians—is the amount of thiamin (Vitamin B_1) in a bowl of Post's Bran Flakes. Just take a look at that chart below! And when milk is added, Post's Bran Flakes contribute an even larger share of nourishment to the morning meal.

If, in planning an adequate breakfast, you start with a ready cereal like Post's Bran Flakes, you are well on your way toward achieving the ideal meal... the kind that supplies at least one-fourth of the day's food needs.

What's more, Post's Bran Flakes are unrationed, economical, and convenient to serve. They are certainly a boon to dietitians, who now more than ever before are interested in foods that save time...money...and labor.

When your thoughts turn to the question of breakfast, think of Post's 40% Bran Flakes. As you can see, they truly belong on the well-balanced menu!

One ounce of Post's 40% Bran Flakes supplies the following approximate percentages of an adult's minimum daily needs:

Thiamin	(.15 mg.)	—15%
Protein	(3.3 gm.)	—5%
Calcium	(21 mg.)	—3%
Phosphorus	(193 mg.)	—26%
Iron	(1.4 mg.)	—14%
Riboflavin	(.05 mg.)	—2%
Niacin	(2.7 mg.)	—18%
Calories	103	

Percentages (except protein and niacin) based upon the minimum daily adult requirements as established by the Federal Food and Drug Administration. Protein based on 60 grams. Niacin based on 15 milligrams.

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NUTRITION GROUP SIX

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From North Africa, Second Lt. Elizabeth Bitzer wrote:

As far as professional experience goes, we have mainly learned how to use new foods, substitute and make the best of what we have—both in food and equipment. Recently we have been getting good supplies of fresh meat from the states, such as beef, pork, and chicken. Local vegetables have been quite plentiful and include carrots, scallions, turnips, peas, etc . . . One thing that we all remark about here is the contrast between the old and new. . . . We go through towns and see sights that make it seem as though we were back in biblical times. There are the camel caravans, the mule packs, fields tilled either by hand or ox teams, girls carrying jugs to wells . . . The fields are full of all sorts of wild flowers and they grow in abundance all around our tents. Many flowers that are cultivated back home grow wild over here. . . . Around our tents we have many small blue and white morning glories, big yellow and white daisies, lots of thistle, buttercups and some flowers I am not familiar with. Another lovely sight as one drives are the fields of red poppies.

We have had some hardships, but we always have managed to joke about them and somehow when we talk about them later they always seem more amusing than anything else.

Just a word about the JOURNAL—it surely is appreciated. It's really our only contact with the profession back home, and it's good to read about what is new in the field.

Also stationed in Africa, Lt. Betty Faist wrote that she had compiled a diet manual which had been approved by the staff and which was the first of its kind in that area. A copy of the manual—very attractive, well-organized, and complete with list of regulations for the Dietary Department—has since been forwarded to the JOURNAL office, together with a letter from Lieutenant Faist which reads as follows:

We were all issued a Sibley stove for our tents and spend most of our evenings chopping wood, making tea, and just generally sitting around the fire enjoying ourselves.

We have ironed out all the little difficulties in our work so that we have a definite routine. New problems, however, are always coming up. This week we received word that our ration dump is out of potatoes, dehydrated and otherwise, rice, and cocoa. It's probably temporary but one certainly needs inventive genius to write special diets. If I ever get back in a position where I can order food after the menus are written instead of patching up menus from what we have in the ration tent, I'll think I'm really not working.

We have changed our uniform again. This time it is to be olive drab men's trousers and shirts like those worn by our medical officers. I guess headquarters thought our fatigues weren't dignified enough and our brown and white seersuckers were certainly meant for summer weather.

I believe that even if I could leave now I'd want to stay on.

Lt. Helen F. Boswell found life in North Africa far from dull. She reported:

This will surely be an experience long to remember, and I would not take a million dollars for it. We did not set up our hospital at our first location, but spent a few weeks sightseeing, and getting accustomed to our new country. I got so I could speak French well enough to get what I wanted! Then we made a very long move, by truck through wonderful country, to our present location which is working out well. We are high on a hill overlooking the Mediterranean. The buildings were very dirty, but you should see them now. The engineers have been a wonderful help to us, and we are going to be quite proud of our place.

Even though we are working very hard, we do have opportunity for some social life. We have a dance, here on our grounds, about twice a month, which lasts till 10:45. Other nights curfew is at 10 with lights out at 10:15. We are near several nice beaches where we can go bathing often. Other pastimes consist of an occasional game of cards, a movie, a local talent show somewhere, or just sitting around talking. All the vehicles in which we ride are built for utility first and last, and it is a real event to ride in a sedan or passenger car.

From "somewhere in England," Second Lt. Catharyn Kane McAndrew sent this description of her work:

We have progressed from British rations, which we found filling but monotonous, to our own B rations; and from a tent with about five field ranges, to huts with windows, concrete floors and a fine cyclotherm system that provides live steam for the handmade, galvanized sinks in the kitchen, for the men's mess gear and also for laundry purposes. We have two large refrigerating units that are really grand in this warm climate, one large central storeroom, a small one for special diet supplies and a bakeshop that is located in a former garage. The excellent cake, pies and doughnuts are made there on field ranges and the bread is supplied by the Quartermaster in town.

Our mess system is divided in two parts, each serving patients from two parts of the area. There is a water-borne sewage-disposal system over the whole area.

The patients requiring special diets comprise about fifteen per cent of those we feed, the majority being on soft and bland diets. We have had a few diabetics, which are something of a problem since we have no low-sugar canned fruits and seldom have fresh ones; we have a good many fat-free, low-protein, salt-poor, one or two allergy and always high-protein, high-caloric diets for the large number of burned and wounded. It is difficult to keep the menus from becoming tiresome, but occasionally we add a treat such as French beer (which is less than one tenth of one per cent alcohol) or ice cream.

Also from England, word was received from Second Lt. Mary A. Triplett, as follows:

The three of us who comprise the dietary staff of our hospital unit here in England are all members of the American Dietetic Association, and we would appreciate your forwarding our new mailing address to the proper person so that we can receive the JOURNAL regularly. We read each copy with enthusiasm—our work over here is so different from that we did at home, and it is only through the medium of literature such as that in the JOURNAL that we keep up to date on the latest developments in the field of nutrition.

And from Second Lt. Ida K. Samuelson:

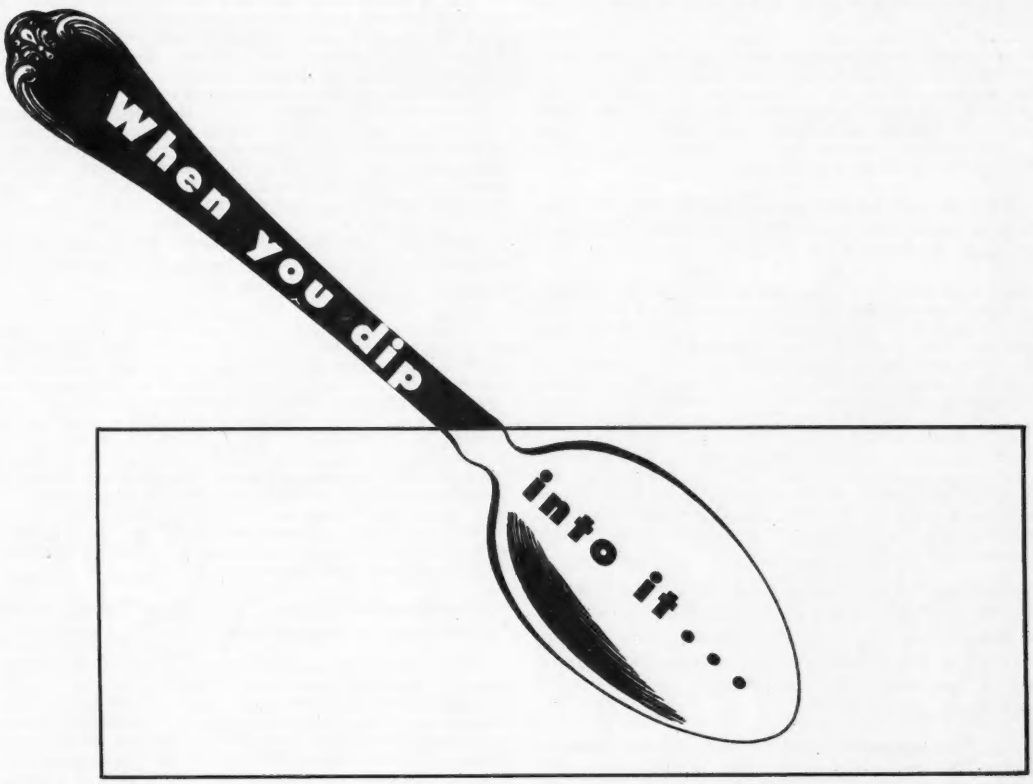
You would probably get the surprise of your life if you came calling on me this afternoon. I have my canteen cup on the stove heating some water for a "wee spot of tea"—you would find us located on an old estate in the English countryside—quite a pastoral scene—the cows are out grazing about a hundred yards from here. You would find me living in a small hut—six girls to a hut. The huts are scattered throughout the estate grounds, containing living quarters for officers, nurses, and enlisted men, wards for patients, kitchens and mess halls, and the different departments. In my little hut you would find six beds, three small dressers, three clothing racks (we share them), six folding chairs, and two small coal stoves which provide us with heat. I found the experience at Camp Robbinswold helpful in managing these stoves.

I took a couple of courses in Experimental Cookery in college, but there certainly is a green field for it over here. I have tried powdered eggs in many different ways, and finally succeeded in making them quite palatable. Then you have powdered milk, English flour (which has a much smaller gluten content than ours and is coarser), English baking powder, a single-acting baking powder, English sugar, which is much more coarse, dehydrated onions, sweet potatoes, cranberry sauce, and yeast. Among the experiences which I shan't forget are the first batch of powdered milk made up for cereal (I make it up as a beverage now and the boys like it), our first scrambled eggs made from powdered eggs, our first cake (I think that was the worst failure), our first custard. We have preserved butter, too—butter which has been hydrogenated with cottonseed oil so that it will not become rancid if you do not have the proper refrigeration conditions—we use it principally in cooking (you can't taste it then), and serve it when we run out of other butter.

I am truly enjoying, nevertheless, my experiences with dehydrated foods and lack of equipment. At times the other dietitian and I tear our hair, but we haven't lost our sense of humor.

Second Lt. Maurine G. Champlin was in Northern Ireland in June, whence she reported that her Mess Department had been the first to receive a superior rating from headquarters; the entire hospital subsequently received two superior ratings. She described the physical setup as follows:

At present we have two well-equipped messes in operation: one located in a one-time stable now painted rust and cream for the ambulatory patients and detachment; the other located in a hut connected with the nurses' huts for the officers and nurses, dietitians, physiotherapist and Red Cross. In the latter mess, men of the detachment serve the officers, but in the former mess a system



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For shiny, sparkling glassware and silverware to please the most fastidious napkin wielder, wash with Wyandotte G.L.X.* This sudsy but soapless dishwashing compound rinses freely, after cleaning thoroughly, and leaves no cloudy film, spots or streaks. It cleans the modern way.

For dishwashing by machine, there's Wyandotte Keego.* Made to do a job in even the hardest water, Keego lifts off soil in a jiffy. Long lasting in the bath, it's economical, too.

If your dishwashing is done by hand, Wyandotte H.D.C.* is the thing. This Wyandotte specialist makes thick, lasting suds. Leaves no hard-to-rinse film.

And after your dishes are washed, rinse them with a Wyandotte Steri-Chlor* solution to control bacteria. Steri-Chlor is readily mixed, easily used. A little kills a lot of germs.

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of semi-self-service, cafeteria-style, is used which seems to cut waste to a minimum.

We now have Drinkwater carts to send the food to the wards, but for the new wards we will have to use British carts which seem almost too fragile for such heavy duty as will likely be expected of them. The kitchens which are adjacent to the mess hall are equipped mainly with British equipment such as British ranges, steam-cookers, stock-pots, but there are a large American mechanical mixer, steel tables (two converted into steam-tables), and an ice cream freezer we prize as a morale builder.

The feeling of satisfaction in accomplishing difficult tasks which permeates all the letters from Army dietitians, is well expressed by Second Lt. Florence A. Allen:

I feel that I have been very fortunate in many things, particularly the people I work with and the place where I work. Of course I am not allowed to give any detailed descriptions but I can say, I think, that I am just beginning to realize that I am not at home, and it is not because of difficulties in my work. I wondered a great many times after I applied whether I would like whatever I was getting myself into and just where it would be. I can happily and truthfully say that I have, on the whole, never been more contented and at peace within myself. I am doing the same type of work that I have always done and liked, but the people I work with and the things that I have to work with are so different from what I had anticipated that I was most happily surprised. More than the fact that I wanted really to do something that I felt would help my country and am realizing that ambition, I am certainly having a good time doing it.

Evelyn Anderson who, as chairman of the Legislative Committee, A.D.A. in 1942, actively worked toward obtaining military rank for Army dietitians, is now serving overseas with the Red Cross and has written with great enthusiasm of her work. A few excerpts from a recent letter are typical:

I've been up here two weeks, started a club, turned it over to someone else and am now on my way to start another club. I've enjoyed this assignment more than any. The club is situated out on a point of land and is surrounded by the sea on three sides. There are beautiful islands off the coast. The climate is perfect. I've had some shelters made out of salvage canvas and put tables and chairs under them. Such a view! We opened the club after we had been here three days.

This is the nearest the front we've had a club and until my replacement came I was the only English-speaking woman for miles around. Everyone has been so nice. It is a wonderful experience to work with combat troops. . . .

I moved still further up the line and again was in the most advanced position and the only English-speaking woman for a couple of weeks. The last assignment was a rugged one. I wouldn't deliberately get into a situation like that again, but I wouldn't take anything for the experience. Now I'm pulled back for a rest and am at the most heavenly place. I could have gone to Capri but it is very gay and I felt the need of much sleep—for I've had few nights of undisturbed sleep lately so I chose another island which is very quiet and beautiful and restful. The place is operated by a Swiss family. The volcanic mountains come down to the sea. There are many flowers and it looks like pictures of the Swiss mountains.

I have been more fortunate than many in having such interesting assignments. Now that I've worked with combat troops in the forward areas I don't want to be back. Combat troops are different from other men. Either the best men get forward or facing danger, continually, changes them. Perhaps it's a bit of both. They are very quiet, thoughtful, and grateful men. They are so appreciative of such small things that one feels badly to think there is so little to offer. They are so unselfish and considerate. I have never had so much done for me in my life as I have on these last two assignments.

In the last place I was assigned they swept the yard for mines the morning after I arrived. Boys were stopping in on their way to and from the battle area with their equipment, guns, hand grenades, etc. In the garden of the place where I last lived there was white tape all around it and a sign "Beware Mines."

After you finish with your magazines I'd appreciate any that you feel like sending. Reading material is always at a premium and there is always a big variety of tastes. It makes no difference if they are old. I'll put them out in the club.

From New Guinea, Lt. Olive A. Smith wrote to Major Burns in August as follows:

The H ration scale has been our biggest problem. The dietitians in this area are a most enthusiastic group. Various meetings have taken place with representatives from the Base Surgeon's Office, Quartermaster, etc. present. We have convinced them that a revision of the H scale is needed. A meeting was called and we dietitians had the opportunity to speak freely and were pleased over the proposed revision. I feel that we have a tremendous job overseas . . . administration plays an important part as compared to therapeutics. . . . The preparation of food is our chief concern and most of our time is spent in its supervision. . . . You would be proud of the dietitians in this particular base. I think they are the finest group I've ever worked with.

And from the New Hebrides, Lt. Violet K. Wallfred depicted work at her station in a letter written in September.

It has been most interesting to see what can be accomplished when one has so little to work with and it does mean a great deal of manual labor. We surely will appreciate labor-saving devices and real equipment. But the work is never monotonous as someone is always planning some piece of equipment, conniving and salvaging a bit here and there to construct or rebuild what we have. We never give up hope—it is quite a pioneering spirit.

At times menu planning becomes quite a problem. Our mess officer started a garden a couple of months ago and we have had fresh lettuce, radishes and some green peppers. The cucumbers and tomatoes are coming along fine.

With our fronts progressing as they are, we hope we may also move and explore bigger and better territories. Our island is one of the loveliest, though isolated.

Shortly after "D day" Lt. Mary Eaton, writing from "somewhere in France" said:

We landed on the beaches just as everybody else had done. It was strange to think that we were walking up that beach and over the sand hills behind it without a moment's thought of any possible danger, when just a few weeks before men had died in hundreds as they fought their way through all the cruel obstacles and heavy fire. . . . We are living under canvas, of course, and have moved several times since arrival; we are now permanently located for a few months anyhow, we hope, and are watching our tent hospital appearing in the fields across the road. . . . When we first arrived and spent our first night in the field, we wondered if we would ever come through alive. Noise, noise, noise, overhead and all around! We're in quite a safe spot now, anyhow, and almost all the noise is ours—day and night it rolls on—supplies, supplies, supplies, troops, ammunition, and overhead the constant roar of planes. . . .

Parts of this Normandy are still untouched and lovely, such green fields, and fruit-filled apple orchards and vineyards, quaint grey stone farmhouses or thatched cottages, and lovely ragged rows of poplars that are so typical of this part of the country. But where the fighting has been bitter, the devastation is unspeakable and appalling. Any words I could use to describe the flattened towns and the countryside with all its wounds and unsightly scars would only sound fantastic and exaggerated.

From the first general hospital to be set up in France, Lt. Myrtle Aldrich wrote:

We are now a tent hospital and as you probably know ours was the first general hospital to be set up in France. . . . It has been amazing and more or less satisfying to have accomplished, especially at our peak load, what we did. The credit goes to all of the mess personnel. In three weeks' time we were running full capacity plus and no one was admitted up to midnight on any day who didn't receive a full, hot meal, one dietitian remaining on duty each night until that hour to take care of such admissions. Of course we use field ranges entirely but we have been trying to secure a baking unit, either an abandoned German unit or an American unit. The cooks have prepared some very good meals and to date every meal has been served on time. We use an ambulance for delivering food to the wards, which is quite successful; the wards are arranged in blocks, seven to a block.

Tent life presents many problems. When it rains the roof leaks and when the wind blows one wonders if we will take off and set up in the next pasture somewhere. We have had French solicitors for our laundry and our attempts at French and theirs at English are amusing at times. One evening two little girls handed me a note written in English which read: "We would like soldiers for washing and pressing." What I produce in French is probably just as entertaining to them. When we first landed in France, we traveled through a good bit of the country which the Allies had taken (at that time a very small portion) and so we had an opportunity to see at first hand some of the devastation of war. It isn't pretty!

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"BUT, MAMMA," giggled little Beulah. "I'm not me, I'm really a Borden inspector coming to inspect!"

"My! MY!" chuckled Elsie, the Borden Cow, entering into the game. "Come right in, Inspector! Though I can't really see why you came to inspect *me!* I'm in the pink of condition."

"Now, now, my good woman," mimicked Beulah, solemnly opening her satchel. "We Borden inspectors don't take anybody's word for the condition of Borden cows. I must give you all kinds of tests! For *every drop* of milk that goes into our Borden products must be as pure as the healthiest cows and strictest laboratory control can make it!"

"*Why, Beulah-baby!*" exclaimed Elsie, hugging her little daughter, "wherever did you learn all those things?"

"*Where did she learn 'em!*" snickered Elmer the bull. "As if you hadn't been drumming 'em into her since she was one day old! . . . As if the house isn't always overrun by your Borden Inspectors! Woman, you never let up—"

"You mean *Borden's* never lets up in its efforts to produce finer milk products like cheese, evaporated milk, ice cream . . . and wonderful things like Biolac and Beta Lactose for babies, too!" amended Elsie. "Then people can always be sure that *if it's Borden's, it's got to be good!*"

—if it's Borden's, it's got to be good!

Reading through these and other letters from dietitians overseas leaves one with a feeling of deep respect for the work which they are doing as well as a sense almost of envy toward these young women who are experiencing the satisfaction of playing an indispensable part in the war, in the midst of exotic and unforgettable, even though so often tragic, surroundings.

APPOINTMENTS AND PROMOTIONS, ARMY MEDICAL DEPARTMENT DIETITIANS

The following dietitians were appointed to the Army Medical Department in September:

Aldrich, Marjorie Frances: Mass. State Col., Amherst; Presbyterian Hosp., New York.
Allen, Florence Loraine: Florida State Col.; Western Penn. Hosp., Pittsburgh.
Bartlett, Mary Philena: Simmons Col.; Fitzsimons G.H., Denver.
Battle, Maude Elizabeth: Univ. of Tennessee; Fitzsimons G.H.
Berry, Frances Marie: Marymount Col., Salina, Kans.; Colorado G. H., Denver.
Bradley, Billie Matilde: Georgia State Col. for Women; Charlotte Memorial Hosp., N. C.
Brown, Mary Angeline: North Texas State Teachers Col.; Duke Univ. Hosp., Durham, N. C.
Brueske, Marjorie Lyda: North Dakota Agricultural Col.; Borden G.H., Chickasha, Okla.
Butler, Margaret Eileen: Univ. of Illinois; Harper Hosp., Detroit.
Dickson, Dorothy: Drexel Inst. of Tech.; Lawson G.H., Atlanta, and S.H., Ft. Jackson, S. C.
Domeszwski, Stella Josephine: Pratt Inst.
Dutton, Elinor May: Framingham State Teachers Col.; Fitzsimons G. H.
Ellett, Louise: Madison Col., Va.; S.H., Ft. Bragg, N. C.
Gaasch, Vera Dolores: Colorado State Col. of A. & M.; Seattle Course for Dietitians.
Gable, Elizabeth: Western Maryland Col.; Fitzsimons G. H.
Gantt, Grace: Iowa State Col.; Barnes Hosp., St. Louis.
Goold, Rachel Florence: Univ. of Illinois; Evanston Hosp., Ill.
Grainger, Gloria Ann: Univ. of Toledo; Fitzsimons G. H.
Green, Catherine: Florida State Col. for Women; Walter Reed G.H., and S.H., Ft. Jackson, S. C.
Harter, Corinne Molly: Carnegie Inst. of Tech.; Lawson G.H., Atlanta.
Hatch, Kathleen Cottam: Univ. of Utah; Seattle Course for Dietitians.
Henney, Margaret Louise: Univ. of Wisconsin; Jewish Hosp., Philadelphia.
Hildenbrand, Shirley Ann: State Col. of Washington; Montefiore Hosp., New York.
Hines, Anne Elizabeth: Univ. of Tennessee; Fitzsimons G.H.
Holbert, Mary Helen: Kansas State Col.; Presbyterian Hosp., New York.
Howard, Betty Gene: Oklahoma A. & M. Col.; Fitzsimons G.H.
Hughes, Kathleen Virginia: Univ. of Minnesota; Fitzsimons G.H.
Keefe, Mary Jane: Simmons Col.; Fitzsimons G. H.
Kopec, S. Virginia: Mercyhurst Col., Penn.; Oliver G. H., Augusta, Ga.
Lawrence, Luella: Univ. of Kentucky; Univ. Hosp., Clevelend.
LeTourneau, Isabelle Agnes: Col. of St. Benedict, St. Joseph, Minn.; Walter Reed G.H.
Martin, Mary Margaret: St. Mary Col., Leavenworth, Kans.; Univ. of Oregon Med. School.
McKillip, Sarah Elizabeth: Pennsylvania State Col.; S.H., Ft. Bragg.
Meyer, Vivian Grace: Univ. of Wisconsin; Johns Hopkins Hosp.
Monroe, Merna Myrtha: Iowa State Col., and Kansas State Col.
Nagel, Betty Ann: Univ. of California; Calif. Hosp., Los Angeles, S.H. Cp. Callan, Calif., and Hammond G.H.
Park, Mary Louise: Salem Col., Winston-Salem; Watts Hosp., Durham, N. C.
Patterson, Mary Agnes: Michigan State Col.; Massachusetts G. H.
Pearce, Andrea Hill: Univ. of New Hampshire; Beth Israel Hosp., Boston.
Renwick, Mary Jane: Michigan State Col.; Massachusetts G.H.
Robbins, Selma Frances: Univ. of California; Jewish Hosp., Brooklyn.
Shriber, Betty Louise: Iowa State Col.; St. Luke's Hosp., Cleveland.
Shoemaker, Kathleen Anna May: Col. of St. Catherine, Minn.; Johns Hopkins Hosp., and Valley Forge G.H., Penn.
Stephenson, Peggy Anne: Antioch Col., Ohio; Univ. Hosp., Cleveland.
Stevenson, Carol Margaret: Kansas State Col.; Presbyterian Hosp., New York.
Strain, Ruth Gladys: Carnegie Inst. of Tech.; S.H. Ft. Devens, and Lovell G.H., Ft. Devens.
Ulrey, Marcella Rae: Kansas State Col.; Johns Hopkins Hosp.
Van Mason, Caroline Esther: Univ. of Washington; Seattle Course for Dietitians.
Vollbracht, Harriet Zoe: Univ. of Wisconsin; Presbyterian Hosp., New York.
Walker, Florence Seaver: Cornell Univ.; S.H., Ft. Dix, and Tilton G.H.
Watson, Ruth Elizabeth: State Col. of Washington; S.H., Ft. Lewis, Wash.
Yarshower, Ruth: Hunter Col., New York; Fitzsimons G. H.

The following promotions for September were announced:

Second Lieutenants to First Lieutenants

Ruth A. Beadle, R-564
Ruth Dickinson, R-11
Lois Maxine Forsythe, R-576
Helen L. Pace, R-141
Betty Jane Sekerak, R-805

LIMITATIONS OF THE EXPERT

Being an expert is apt to be heady wine. When combined with the power of government, it can become intoxicating spirits. The expert's fund of knowledge in his specialty exceeds that of ordinary laymen; and knowledge itself is power, and power is a constant temptation. It tends to destroy humility and to encourage a paternal attitude towards the inexpert. The danger is that the expert, filled with special knowledge, is apt to confuse his knowledge with social wisdom. His very concentration on a sector of human life tends to blind him to a consideration of all the circumstances. If his specialty is science he is particularly apt to ignore the imponderables in human nature and the existence of other human values outside the range of his concentration. His very fidelity to science leads him to think of people as statistics and not as persons. The well-known narrowing influence of specialization calls for overhead articulating minds. In the field of government only the opinion of people, expressed through their elected representatives, can compensate for the limitations of the expert. . . . No profession is competent to decide the problems arising from its relation to other groups and to society. It is only the opinion of the multitude that can settle such questions. Because the expert is incapable of making decisions for the people, he must always be subordinate to political masters. "A guest," said Aristotle, "will judge better of a feast than a cook."—*Excerpt from "The Role of the Expert in Government," by H. W. Dodds. Milbank Mem. Fund Quart. 22: 207, 1944.*

a Poor Scholar . . . because of a Poor Breakfast

MANY a child is scolded for dullness when he should be treated for undernourishment. In hundreds of homes a "continental" breakfast of a roll and coffee is the rule. If, day after day, a child breaks the night's fast of twelve hours on this scant fare, — or less — small wonder that he is listless, nervous, or stupid at school.

Pablum offers a happy solution to the problem of the school-child's breakfast. Mothers who learn about Pablum from their physicians are delighted to serve it, for it needs no cooking and can be prepared in a minute at the table — more quickly than many less nourishing foods. Right now, this feature is especially valuable in homes where the mother is engaged in war work. Pablum not only ends the bane of long cooking of cereals but in addition furnishes a variety of minerals (calcium, phosphorus, and iron) and the vitamin B complex. It is an excellent vehicle for milk.

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PABLUM is rich in calcium and iron, minerals likely to be deficient in the school-child's diet yet needed in more than average amounts during childhood. Numerous clinical studies have demonstrated that Pablum gives good weight gains and increases hemoglobin values in both normal and sick infants and children. Reprints on request of physicians.

Pablum (Mead's Cereal thoroughly cooked) is a palatable cereal enriched with vitamin- and mineral-containing foods, consisting of wheatmeal, oatmeal, wheat embryo, cornmeal, beef bone, alfalfa leaf, brewers' yeast, sodium chloride and reduced iron. (The oatmeal form of Pablum is called Pabena.)

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Current Literature

Contributed by Helen Baughman, Janet Engebretsen, and Hilda McEwen, Dietary Department, Johns Hopkins Hospital, Baltimore; Quindara Oliver Dodge, School of Home Economics, Simmons College, and Women's Educational and Industrial Union, Boston; and the Journal Staff.

AMERICAN JOURNAL OF MEDICAL SCIENCES

Vol. 208, August 1944

*Use of gelatin solutions in the treatment of human shock. D. D. Kozoll, H. Popper, F. Steigmann and B. W. Volk.—p. 141.

Treatment of Shock. Gelatin solution was an effective agent in the treatment of the majority of 52 patients suffering all degrees of shock. One 1000-cc. administration of a 5% gelatin solution in normal saline produced good results. Sedimentation rate increased, but did not influence treatment.

AMERICAN JOURNAL OF PHYSIOLOGY

Vol. 142, August 1944

*Depression of the normal erythrocyte number by soybean lecithin or choline. J. E. Davis.—p. 65.

*The maintenance of a normal serum calcium by the parathyroid gland in nephrectomized dogs. E. P. Monahan and S. Freeman.—p. 104.

*The synergistic effect of caffeine upon histamine in relation to gastric secretion. J. A. Roth and A. C. Ivy.—p. 107.

Erythropoiesis Depressed by Choline and Lecithin. Daily oral administration of 5 gm. soybean lecithin to 4 normal dogs caused significant reductions in their red blood cell counts, which persisted for at least 10 days after cessation of lecithin feeding. Choline hydrochloride, in daily oral doses of 8 mg. per kg., caused significant depressions in the erythrocyte numbers of 4 dogs. More than 10 days were required for maximum depression of red cells to occur, and atropine was shown to block the depression for a longer period than the 18 days during which it was administered. These results are explained by assuming that choline depresses erythropoiesis by increasing the blood flow and oxygen supply to bone marrow, through its vasodilator action.

Parathyroid and Serum Calcium Independent of Kidney. A decrease in the serum calcium concentration amounting to about 50% in 72 hr. was observed in nephrectomized-parathyroidectomized dogs. No similar decrease was observed in nephrectomized controls. The serum inorganic phosphorus and nonprotein nitrogen were markedly elevated in both groups. The evidence indicates that the parathyroid gland exerts an influence on calcium metabolism that is independent of the kidneys.

Histamine Gastric Secretion and Caffeine. It has recently been demonstrated that caffeine is a potent stimulant of gastric secretion in the cat and in man. This study shows that gastric secretory response to histamine or alcohol is greatly enhanced and prolonged after caffeine in comparison to the output of hydrochloric acid or gastric juice provoked by the pre-caffeine administration of histamine or alcohol. The gastric secretory response to histamine or alcohol and caffeine administered simultaneously is considerably greater than the sum of the preceding individual responses to the same doses of histamine or alcohol and caffeine given separately. The response to the combined action of these drugs is prolonged and maintained at a high level.

ANNALS OF INTERNAL MEDICINE

Vol. 21, August 1944

*Glycosuria in meningitis. F. Ferguson and D. Barr.—p. 173.

Glycosuria in Meningitis. Spontaneous, transient glycosuria accompanied by hyperglycemia and ketosis frequently occurs at the onset of meningitis. These symptoms often mask signs of meningitis causing costly delays. In several instances, a disturbed carbohydrate metabolism appeared long before the spinal fluid became abnormal.

ARCHIVES OF INTERNAL MEDICINE

Vol. 74, August 1944

*Diabetes insipidus; clinical observations in forty-two cases. G. M. Jones.—p. 81.

Diabetes Insipidus. A complete review of diabetes insipidus is given in a study of 42 cases. Therapy most effective was injection of pitressin tannate in oil; intranasal application of pitressin jelly was unsatisfactory. Low-salt diets seem worthy of a trial in diabetes insipidus since polyuria can generally be kept at a minimum level; normal salt intake will maintain chloride balance. Thyroidectomy alleviated symptoms but cannot always be performed in these cases.

BRITISH MEDICAL JOURNAL

No. 4359, July 22, 1944

*Some problems in riboflavin and allied deficiencies. I. H. S. Stannus.—p. 103.

No. 4360, July 29, 1944

*Some problems in riboflavin and allied deficiencies. II. H. S. Stannus.—p. 140.
Problems of ariboflavinosis. Editorial.—p. 153.

No. 4362, August 12, 1944

*The nutritional status of Cambridge school-children. J. Yudkin.—p. 201.
*Nutrition and scholastic attainment. I. F. Mackenzie.—p. 205.

No. 4363, August 19, 1944

*Scurvy: A survey of fifty-three cases. R. B. McMillan and J. C. Inglis.—p. 233.
*Incidence of bleeding gums among R. A. F. personnel and the value of ascorbic acid in treatment. W. P. Stamm, T. F. Macrae and S. Yudkin.—p. 239.
Dehydrated vegetables. Editorial.—p. 250.

No. 4364, August 26, 1944

Changing food habits. Editorial.—p. 280.

Riboflavin and Allied Deficiencies. The whole syndrome known as "ariboflavinosis" or as the author prefers to call it—hyporiboflavinosis—is considered. Some uncertainty still exists as to whether any other factor in the B_2 complex plays a part. All the symptoms respond to treatment with yeast. It is suggested that the first tissue to suffer the effects of riboflavin deficiency is the endothelium of the capillary system; that in turn there is an interference with the normal cellular metabolism; and that the derangement of tissue function is relatively greatest in those tissues which possess the highest degree of capillarity and whose metabolism is greatest. So long as the intensity of the functional disorder be not too great, and so long as it does not persist too long, complete recovery may take place, otherwise irreversible processes occur which lead to pathological changes.

Nutritional Status of Children. The nutritional status of about 1100 children determined in 1942 was re-examined one year later. The average heights and weights were slightly greater than for children of the same age examined the year previously; in other respects no change was seen. No deterioration in the diets of these children had occurred between the third and fourth year of the war. Since February 1942 half of the children had been receiving vitamin pellets at school, containing approximately half the daily requirements of vitamins A, B, C and D. The other half of the children received control pellets containing no vitamins. After a year no effect was seen in the gain in height and weight, hemoglobin, strength of grip, dark adaptation, resting pulse rate, vital capacity, breath-holding time, or endurance measured by R.A.F. mercury test. There was improvement in vitamin C saturation, a decrease in the incidence and duration of colds, and an improvement in school behavior as assessed by the teachers. It is pointed out that the absence of effect on growth, hemoglobin, etc., cannot be taken to imply that these are not limited by nutritional factors.

Nutrition and Scholastic Attainment. The nutrition grades of 355 bright and 357 "slow" children were investigated. Of the bright children 28.2% were graded Nutrition A and 5.8% graded Nutrition C. Only 6.7% of the slow children were grade A, while 22.1% were graded Nutrition C. The 3 instances of grade D were found in the slow group. In addition, 583 members were arranged according to sex. Of the bright boys 26% were graded A and 7.4% were graded C, the corresponding figures for the girls being 30% and 4%, respectively. In the case of the boys who were regarded as slow, 7% were Nutrition A and 18.6% were Nutrition C whereas 5.3% of the girls in the slow category were Nutrition A and 26.6% were Nutrition C.

Scurvy. The disease observed was typical "bachelor" scurvy. There were three root causes: first and most important was ignorance, mainly in males, of the need for potatoes and vegetables in the diet; second, apathy leading to neglect of the same items because they required preparation and cooking; third, poverty, making it impossible to buy an adequate diet or live anywhere but in the worst type of lodging with poor cooking facilities. The first was not so significant in peacetime as many countered by eating fruit. Wartime scarcity of fruit without a compensatory increase in the intake of potatoes and vegetables resulted in such individuals developing scurvy. There are indications that vitamin C

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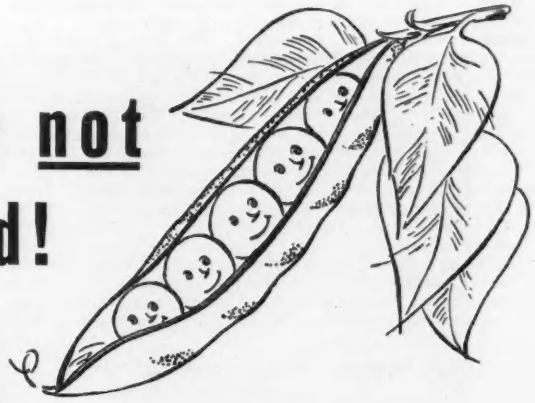

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intake which deteriorated in the two years after 1940 when shortages and rationing first became apparent, is improving.

Bleeding Gums in R.A.F. Personnel. The average amount of ascorbic acid present in the food served to airmen at three R.A.F. stations was 25.8 mg. per man daily during October and November 1941, and 16.8 mg. during March 1942. On examination of 2962 personnel, 19.8% were found to have some degree of bleeding of the gums, a similar incidence being found in the autumn and spring and at each of the four stations where investigations were carried out. No greater improvement in the gum conditions was obtained by treatment with ascorbic acid than with dummy control tablets. Observation of 600 personnel over a 6-week period showed that there was a large normal variation in the degree of bleeding of the gums, irrespective of treatment. Those having "sponginess" as well as bleeding of the gums showed no greater improvement with ascorbic acid treatment than with dummy tablets, although there was less variation in their condition. Patients' personal opinions as to the efficacy of treatment have no relation to the objective signs.

CANADIAN MEDICAL ASSOCIATION JOURNAL

Vol. 51, August 1944

*Further studies on the relationship of corneal vascularization to riboflavin deficiency. J. F. McCreary, J. V. V. Nicholls and F. F. Tisdall.—p. 106.

Corneal Vascularization. In this study, carried out using both photography and slit-lamp examinations, the 41 subjects had been provided with a ration containing 2.9 mg. riboflavin per day for a period of one year. Approximately one half of the subjects were given a supplement of 3.3 mg. riboflavin 3 times a day for 2 months and the others received placebos. Under the conditions of this study there was no consistent change in corneal vascularization in either the treated subjects or the controls. It seems that a uniform peripheral corneal vascularization is not a safe basis for a diagnosis of riboflavin deficiency existing at the time of the examination. Such a lesion may be due to riboflavin deficiency but the deficiency could have occurred at any time previous to the examination. Also these blood vessels could have been reactivated by some cause other than lack of riboflavin.

CANADIAN JOURNAL OF PUBLIC HEALTH

Vol. 35, June 1944

*A nutrition survey in East York Township—repetition of dietary studies after two years. H. P. Ferguson and E. W. McHenry.—p. 241.

Vol. 35, July 1944

*Errors in the calculation of the nutritive value of food intake. E. M. Semmons and E. W. McHenry.—p. 286.

Nutrition Survey in East York. A re-examination has been made of the food intakes of 75 students on whom a nutritional study was carried out 2 years previously. Evaluated in terms of accepted dietary recommendations, both girls and boys showed marked improvement. In most cases there had been changes in standards because of alterations in age; standards for one half the girls were decreased, those for most of the boys increased. On the basis of foods actually used, girls showed little change except an increase in ascorbic acid. The actual intakes of the boys were markedly increased in calories, ascorbic acid, and other nutrients. Rationing has not caused any deleterious effect upon the food supplies of this group. It is believed that the improvements found were due to educational efforts and to a bettering of economic conditions.

Nutritive Value of Food Intake. The calcium contents of 21 different meals were analytically determined and also calculated (using food composition values from 3 tables). The mean of the actual contents was from 86 to 94% of the contents secured by calculation. Individual meals showed a considerable variability in differences between determined and calculated value. The probable error of the mean for 21 meals is 2.5, indicating that the use of this number of meals in a dietary survey gives a more reliable estimate of calcium intake than would a few meals. It is likely that the calcium intakes recorded in various Canadian dietary surveys are about 15% too great. A preliminary study of the calcium content of milk, using samples purchased in Toronto, indicates that the actual content is about 20% less than the amount given in the food tables; this may be a factor in causing the discrepancy between actual and calculated values for meals.

FOOD RESEARCH

Vol. 9, July-August, 1944

*Ascorbic acid content, color, and palatability of fresh and processed Swiss chard and beet greens. T. Porter, D. M. Schlaphoff, M. A. Wharton, A. M. Briant and R. M. Beltz.—p. 268.

Retardation of fat autoxidation in dried milks. M. B. Williamson.—p. 298.

*Some factors affecting the behavior of Cheddar cheese in cooking. C. Personius, E. Boardman and A. R. Ausherman.—p. 304.

*Riboflavin content of milk and milk products. L. Daniel and L. C. Norris —p. 312.

*Dehydration of meat scrapples. B. C. Carl, B. M. Watts and A. F. Morgan.—p. 319.

*Influence of ingredients on thiamin content of biscuits. V. R. Williams and E. A. Fieger.—p. 328

Ascorbic Acid in Chard and Greens. The average ascorbic acid content for Swiss chard (Fordhook) was 35 mg. per 100 gm. fresh leaves; Rhubarb variety, 39 mg. per 100 gm.; beet leaves (U.S. 200 × 215), 62 mg. per 100 gm., and (Detroit Dark Red) 61 mg. per 100 gm. There was no statistically significant variation in the level of ascorbic acid between the August and September harvesting of Swiss chard. Cooking in family-size quantities was more desirable when done in a moderate quantity of rapidly boiling water than with no water except that which clung to the leaves after the last rinsing. From a statistical analysis, the former method was superior for the preservation of color, for the retention of reduced ascorbic acid, and for palatability. The institution cooking under the conditions of the experiment produced greens low in ascorbic acid. Holding greens cooked by the institution method 10 or 60 min. seemed to make little difference in final scores on palatability, but the reduced ascorbic acid was significantly lowered after the 60-min. holding period. Both varieties of Swiss chard ranked higher on palatability scores than either the red-beet or sugar-beet leaves.

Cheddar Cheese in Cooking. Four samples of Cheddar cheese of normal fat content showed a progressive improvement in cooking quality over a 12-month ripening period and this was more rapid in a high-moisture cheese. In general, cheese ripened in hermetically-sealed cans showed a more rapid improvement in cooking quality than part of the same curd ripened in a daisy. There was no direct correlation between the percentage of the total protein that was soluble and the observed cooking quality. However, the cooking quality improved and the amount of soluble protein increased with the length of the ripening period. Low-fat cheeses were conspicuously poor in cooking quality. Relatively high temperatures and long periods of heating tended to cause greater separation of fat from a cheese; matting, stringing, and toughening of the cheese mass were also increased. The acidity and the ion content of the liquid with which a cheese is combined apparently affect the blending qualities and the tendency of the mixture to mat or string on heating. Between *p*H 5.2 and 5.6 the greatest tendency for matting and stringing was observed. At acidities between *p*H 4.0 and 4.7 to 5.0 the cheese separated from the liquid with which it was combined as hard, curd-like particles, while within the range *p*H 5.8 to 8.0 appreciable dispersion was observed. It is possible that the calcium-removing property of the phosphates in the buffer solutions of *p*H 5.8 and above played a major part in increasing the dispersion of the cheese.

Riboflavin in Milk and Milk Products. Average riboflavin values (fresh basis) of the products studied were: dried sweet-cream buttermilk, 33.65; dried whey, 20.72; spray-dried skim milk, 19.81, roller-dried, 18.81; spray-dried whole milk, 15.44, roller-dried, 14.76; Cheddar cheese, 4.71; condensed milk, 3.95; evaporated milk, 3.57; cottage cheese, 3.00; cream cheese, 1.87; liquid whole milk, 1.77; liquid skim milk, 1.58; liquid buttermilk (cultured), 1.56; light cream, 1.47; liquid whey, 1.24; and butter, 0.367 mcg. per gm.

Dehydration of Meat Scrapples. A formula is given for making pork scrapple which will dehydrate successfully and not turn rancid readily. The fat content of the fresh pork used should not be over 20%, preferably 12 to 18%, corresponding to a fat content in the dehydrated scrapple of about 30%. The amount of water used should be as little as possible yet sufficient to hydrate the corn meal. The grind of corn meal used must be coarse enough to allow adequate rehydration of the scrapple but not so coarse as to cause excessive tenderness, and only enough corn meal must be used to bind the meat into a loaf. Salt and pepper only were used for seasoning since when other seasonings were added the flavor was not so desirable. Scrapple may be eaten in the dehydrated form or reconstituted into patties, meat loaf, or creamed preparations. It can be compressed to about 60% of its original volume to save storage and shipping space. When compressed it contains about 5 calories per cubic centimeter and has a density of about 1 gm. per centimeter, a moisture content of 4%, protein 37%, and fat 28%. Palatability tests showed that dehydrated scrapple is much preferred to dehydrated ground pork, either raw or steamed. Other cereals, particularly barley, cracked wheat, and chipped rye, may be substituted for part of the corn meal to improve flavor. Other meats may be substituted for pork, beef being particularly successful.

Thiamin Content of Biscuits. No significant differences could be demonstrated in the thiamin content of shortened, and unshortened biscuits. The addition of steapsin to samples in the extraction process, however, effected an increase of at least 5% in the thiamin-assay value of both shortened and unshortened samples after a correction had been made for the thiamin content of the steapsin. In addition to a higher assay value obtained by use of the steapsin the extracts obtained after the digestion process were clearer, filtered more rapidly, and left a smaller residue than did those from samples hydrolyzed with diastase alone. The percentage retention of thiamin in enriched-flour biscuits was equal to that in the rice polish-enriched biscuits,

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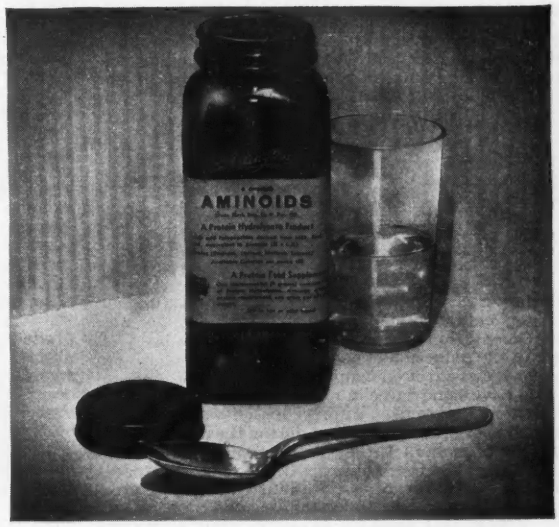

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indicating thereby that the source of the thiamin had no influence on the degree of retention. Enriched-flour and rice polish-enriched flour biscuits made with 4 different leavening agents ranked in the same order when arranged according to decreasing thiamin content and increasing pH. Arranged thus, they rank: soda lactic acid, cream of tartar baking powder, calcium-acid phosphate baking powder, and sodium aluminum sulfate-calcium acid phosphate baking powder.

INDUSTRIAL MEDICINE

Vol. 13, June 1944

*B-Complex dietary supplementation. In industry. W. I. Fishbein, W. Tannenbaum and C. Shannon.—p. 489.

Vol. 13, July 1944

*The coordination of federal and state industrial nutrition programs. R. S. Goodhart.—p. 592.

B Complex Dietary Supplementation. Results of this study in which the psychologic effect of medication was ruled out, demonstrated that supplementation of average diets with B complex had a favorable effect in the reduction of constipation and fatigue. It also indicated a beneficial effect on mental alertness, appetite, and sleep. It may also have some value in relation to eyestrain.

Industrial Nutrition Programs. Unprecedented attention has been paid to nutrition of industrial workers during the past 2 years. A March 1944 survey of manufacturing plants reveals that 48.8% provide feeding facilities for their employees with plans for expansion in this direction. The future of the industrial feeding program is largely dependent upon the understanding and cooperation developed among government agencies, industry, labor, and community groups and organizations. The Government endeavors to obtain general acceptance of programs and procedures necessary to protect the health of workers in war plants; it is responsible for making available equipment and facilities; for determining certain policies regarding financing of industrial feeding operations; for recommending wartime patterns for plant food services that conserve materials, food, manpower, and time, and which provide for adequate meals for the worker; it is responsible for food distribution and price control and, along with state and local groups, for recommending nutrition education programs for workers and their families. State functions include the enforcement of federal recommendations, the development and implementation of effective nutrition education, the determination of prime nutrition problems and peculiarities of the locality, and the need for community food service facilities, also the promotion of more effective use of equipment and existing facilities, the procurement of part-time workers for such services, encouragement of training courses for dietitians and food managers, and the maintenance of a full-time staff of industrial feeding specialists.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

Vol. 126, September 2, 1944

*The comparative cost of vitamin mixtures. Council on Pharmacy and Chemistry.—p. 29.
*Political care of the mentally ill in New York. Current comment.—p. 33.

Vol. 126, September 9, 1944

*Vitamin content of prepared cereal foods. G. Kitzes and C. A. Elvehjem.—p. 100.
*Abortive or nonparalytic poliomyelitis. Editorial.—p. 103.
*Air borne poliomyelitis. Editorial.—p. 104.
*Theory to account for malnutritional antiviral immunity. Editorial.—p. 105.

Vol. 126, September 16, 1944

*Margarine fortified with vitamin A. Council on Foods and Nutrition.—p. 168.
*Syntheses in the intestine. Current comment.—p. 174.
*Diet as predisposing factor in rheumatic fever. Current comment.—p. 174.
*Psychosomatic relationship to gastrointestinal diseases. M. G. Vorhaus and S. Z. Orgel.—p. 225.
*Changing food habits for better nutrition. Editorial.—p. 234.
Heat production on mixed diets. Editorial.—p. 237.

Cost of Vitamin Mixtures. Results of a survey of multiple vitamin products offered in one of the largest department stores in the United States, including the selling costs and declared contents, and for purposes of comparison the price rate per hundred capsules or tablets. None of the preparations listed stand accepted by the Council for inclusion in *New and Nonofficial Remedies*. "Further, the advertising claims offered on behalf of some of the mixtures preclude any possibility of their acceptance." The table is offered solely to emphasize the importance of examining the labels and of using standard reference sources, such as *New and Nonofficial Remedies*, to ascertain recognized actions and uses and to compare these with "the profuse and deceptive statements prepared by the more ebullient promoters."

Mentally Ill in New York. "The report indicates that this service had not attracted competent physicians. Nurses were insufficient in numbers and defective in quality and were assigned to administrators and their families rather than to patients. The diets were monotonous and were not supervised by dietitians. Research and education were neglected or isolated in bureaucratic subdivisions apart from the treatment of patients. Here were all the apparently inevitable evils of mass medical treatment. Here were all the faults that usually accompany compulsory political care. Here, in miniature, is a picture of what the American people may expect if political medicine ever takes over general medical care in this country."

Vitamin Content of Prepared Cereal Foods. More extensive data supplementing those published earlier are now tabulated and some new products included, but the main purpose of the additional work was to determine the variation in the vitamin content of the typical products on the market. The values for whole grains are included again for comparison. The variation between samples of the same product purchased at different periods is surprisingly small. The restored and enriched products gave the most variable results, owing undoubtedly to the higher vitamin distribution of the added vitamins. Some of the products low in thiamin also showed considerable variation, probably because of differences in the degree of processing. A large percentage of the wheat products and practically all of the corn, oats, and rice products contain levels of thiamin within the range for the whole grains. Very few of the riboflavin values fall below the corresponding minimum whole grain values. The biggest discrepancy occurs in the niacin values for wheat. Very few of the products, even when the vitamin has been added, meet the minimum values of 5.4 mg. for 100 gm. The reason for this is readily evident. Wheat bran is very rich in niacin, and the bran is generally removed in the preparation of the wheat products. Further consideration may have to be given this standard, but in any case a product designated as containing added niacin should contain more than 4 mg. per 100 gm. It is evident that the cereal manufacturers have made excellent progress in improving and standardizing their products. Sufficient data are now available to allow rather accurate estimation of the amount of thiamin, riboflavin, and niacin contributed by most of the commercial products. In the process of handling the numerous brands of prepared cereal foods which were examined, the lack of uniformity in the expression of nutritional values on the package was quite apparent. Some are expressed in terms of the average serving, others as a 1-oz. serving or on a pound basis, giving the percentage of the minimum daily requirements in some cases and in others the milligrams or international units contained therein. It is difficult or impossible for the average person to make an intelligent comparison of the nutritional content of the various cereal products by examining the labels. Content should be expressed on the uniform basis of the average 1-oz. serving with the nutritional content in terms of percentage of daily requirements as well as actual milligrams.

Nonparalytic Poliomyelitis. Fortunately the most frequent clinical form of poliomyelitis is the abortive or nonparalytic. Similar transitory infections may occur in the experimental disease in monkeys. In both cases the absence of paralysis is not necessarily due to failure of the virus to invade and multiply in the tissues of the central nervous system but to limitation of its spread therein. The limitation may depend on the virus, on the host or on both. At present there seems to be no practical way of increasing successfully the resistance to human poliomyelitis by artificial means. Previous efforts to that end led to the conclusion that the injection of killed virus is not effective. A safe method of immunizing with modified living virus has not yet been found.

Air-Borne Poliomyelitis. It is concluded from these tests that the concept of poliomyelitis as an air-borne disease acquired by inhalation of contaminated air or dust deserves more consideration. Such a view does not exclude ingestive infection, since experiments have shown that in monkeys infection occurs with equal ease by the two ways. Which mode of infection is the more important for man is a problem that still awaits solution.

Malnutritional Antiviral Immunity. Many clinicians have assumed that resistance to pathogenic viruses would be lowered as a result of dietary deficiency and that prophylactic effects would follow the administration of corrective doses of such factors as ascorbic acid, thiamin, riboflavin, nicotinic acid, and pantothenic acid. This line of reasoning has been challenged and the conclusion drawn that even a partial reduction in optimum thiamin intake increases resistance to poliomyelitis virus. Mere restriction of caloric intake without reduction in ingested thiamin resulted in a similar though less definite increase in resistance to poliomyelitis. A theory to account for this malnutritional antiviral immunity has been suggested: that vaccinia virus is less able to multiply in poorly nourished tissue cells than in adequately nourished cells. With this theory a malnutritional hypersusceptibility to bacterial infections coupled with a partial malnutritional immunity to virus diseases ceases to be paradoxical.

Margarine Fortified With Vitamin A. The fact that margarine is cheaper to produce than butter is nutritionally important, and attempts to stigmatize it or restrict its distribution are undesirable. The Council is concerned wholly with nutritional value, and no consideration has been given to the economic effect of taxes reducing the margin of cost between the two products or their

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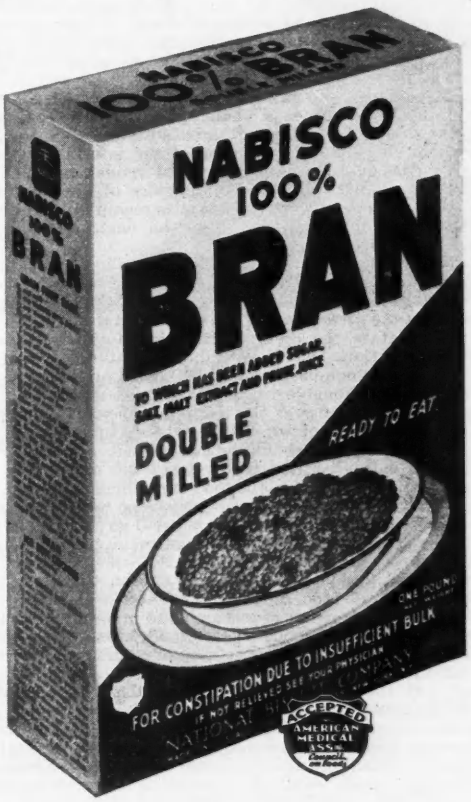
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elimination. The Council reaffirms its confidence in the nutritional value of margarine containing vitamin A as follows: Margarine contributes primarily fat to the diet. The fat is equal in digestibility and caloric value to other food fats. The standardized vitamin A content of fortified margarine was so set that it contributes this nutritional factor in amount equivalent to average butter in accordance with information available at that time. (Recent surveys indicate a higher average value for butter.) The milk solids other than fat (1%) present in both butter and margarine are of negligible nutritional importance. When margarine is fortified with vitamin A the investigations that have been made lead to the conclusion that it can be substituted for butter in the ordinary diet without any nutritional disadvantage.

Vitamin Synthesis in the Intestine. The fact that the order of effectiveness of the sulfonamide drugs in producing vitamin K deficiency is much like that observed in their bacteriostatic action on *Escherichia coli*, together with the observation that this group of organisms is particularly active in the synthesis of vitamin K, emphasizes anew the point of view that various types of intestinal bacteria exert a beneficent influence. The synthesis of vitamins of the B complex group, early reported in experimental animals, was recently cited again as a contributing factor in human nutrition, and attention has been called to the possibility of amino acid production by these organisms. Further investigation will doubtless reveal other ways in which this symbiotic activity in the intestine is of value to the host.

Diet in Rheumatic Fever. The genesis of rheumatic fever has not yet been explained: most features of the disease would appear to label it as due to a specific agent not yet identified, although numerous precipitating or predisposing factors presumably occur, among which diet may be included.

Psychosomatic Illness. The gastro-intestinal tract is the primary battleground for the conflicts between the psyche and the soma. Here is the site for many primitive gratifications and abuses, adjustments and accommodations. These concepts have long been recognized but are only now being translated into a dynamic plan of treatment. Since these so-called functional cases represent more than a majority of all those seen in a gastro-intestinal clinic or in private practice, the large percentage of failure in this group is a challenge. Careful screening of all patients and the selection of those suitable for psychoanalytic therapy is an obligatory function of the internist. For the remainder, the gastro-enterologist must render as much psychotherapy as the flexibility and intelligence of the patient permit. The modern concept of psychosomatics reemphasizes the need for the treatment of the entire patient, his emotional difficulties as well as his physical disease.

Food Habits. "Our eating habits are affected by the ability of housewives in general and of cooks to cook. Many a mother has pretty definite ideas about what is good for the family in the way of food, but the preferences of the father and the children are more likely to dictate the dietary than the mother's knowledge of scientific nutrition. . . . Since established habits of eating are hard to change, more emphasis should be placed on desirable traits in the early impressionable years. The stress on proper feeding of infants and children over the past several years should soon be paying dividends in better eating habits in the younger generation. The gains made should be maintained. Without change in established eating habits, improvement will come from the continuation and expansion of the food enrichment program. . . . The impositions and restrictions of wartime are without permanence. When restrictions are released, people will go back again to eating what they like. Even the law cannot make people enjoy eating something they do not like. But some benefits on our national nutrition will undoubtedly result from the war aside from the increased scale of food production. There will be new types of food available as a result of research and innovations in transportation. Old familiar foods will be made more attractive to the eye and the palate. The sum total of our wartime food experience can hardly be other than good. Nutritionists and others concerned with the correction of our nutritional delinquencies may extend the gains thus far made. No doubt a planned state would provide community kitchens and dining rooms in which the workers and their families would eat exactly what the nutritionists put out for them, but as long as our civilization continues to be based on the family, food habits are going to control eating."

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

Vol. 97, July 1944

*Food: Facts and fads. P. R. Cannon.—p. 17.

Food: Facts and Fads. Though we may have to modify some of our former meat eating habits, and suffer the nuisance value of rationing, black markets, subsidies, food planning and the like, nevertheless we will probably continue to be the best-fed nation in the world. Relentless hunger exists throughout the world as it probably never has before, and it will continue to dominate the daily lives of millions of miserable people until the last wretched victim of this war has died from his terminal infection. As the war proceeds, starvation will gradually loom up as its biggest medical fact, and food will be its only cure. Many if not most of our food fads have come into prominence because of our ignorance of food facts. As we learn more about the facts of food, we will gradually concern ourselves less about its fads.

PRACTICAL HOME ECONOMICS

Vol. 22, September 1944

*The history of home economics—Part III. H. T. Craig.—p. 310.
*Teaching housecraft in Britain. P. Lovell.—p. 333.
*The Nutrition Corps of Hingham. A. Billa.—p. 336.
What's cookin' in the school lunch?—p. 338.

History of Home Economics. Topics discussed at early meetings of home economists at Lake Placid and elsewhere are listed, and some activities of various groups described. Several prominent home economists are mentioned, and photographs of many are included.

Home Economics Teaching in Britain. State schools of the London area include cooking as part of a domestic science course known as housecraft. One end of the classroom is divided into a suite of rooms, and meals are cooked, served, and eaten in the flat by groups of 5 girls at a time. The course occupies the equivalent of half a day a week for 3 years, beginning when the girls are eleven. Early lessons include simple teaching of food values and the general principles of nutrition. Elementary "invalid cookery" is included in the first year's training. The Ministry of Food has supplied to the schools a great many leaflets, recipes, and nutrition charts, and has suggested methods of using the war substitute foods such as dried eggs, salted cod, household milk (powdered) in new dishes. "Snack-meals" are prepared, and the intelligent use of canned foods is taught. In some cases, the boys take part of the course.

Nutrition Corps. A Nutrition Corps was formed by members of home economics classes of Hingham High School, Hingham, Massachusetts, "for the purpose of spreading nutrition news throughout the school, improving eating habits, and decreasing food waste." Activities included showing of films to nutrition classes, brief talks in home rooms, distribution of pamphlets to students, and awarding of tags to those eating well-balanced lunches regularly.

SCIENCE

Vol. 100, August 4, 1944

*Item. Science news.—p. 10.

Vol. 100, August 11, 1944

A survey of food prices. J. M. Luck.—p. 125.

Vol. 100, August 18, 1944

*The possible existence of a microbiologically inactive "folic acid"-like material possessing vitamin activity in the rat. A. D. Welch and L. D. Wright.—p. 153.

Alaskan Reindeer Dwindling. Army officers are worried about the great drop in reindeer during the past 12 years. These herds constitute a military as well as an economic asset to Alaska. Their meat could ensure against a shortage in proteins, and their hides make excellent clothing and sleeping bags for Arctic use. The herds feed mainly on the tough vegetation of desolate tundra stretches that were completely useless before their introduction from Asia several decades ago. Wolves have been attacking the animals, which are at present inadequately protected. The use of fighting planes to control the predators and the replacement from well-guarded government-owned herds are points now under consideration.

New Vitamin? These observations suggest that one (or more) of the components of milk may be utilized by the rat for growth and other purposes in lieu of material possessing the microbiological activity of "folic acid." Whether the material in milk is structurally related to microbiologically active factors or whether it is in some manner concerned with the metabolism of "folic acid" is now under investigation.

SOUTHERN MEDICAL JOURNAL

Vol. 37, August 1944

*The esophageal manifestations of pellagra. G. E. Fisher.—p. 446.
The treatment of diabetic coma. L. B. Owens.—p. 450.
Diabetic coma. F. G. Speidel.—p. 454

Pellagra. Pellagra, although a reportedly ancient disease, is present in a large number of patients seen today. It is a disease which affects all tissues of the body and occurs in young and old persons of either sex. A diet insufficient in nicotinic acid, thiamin chloride, and riboflavin seems to be its chief etiological factor. This disease frequently causes severe hyperemia and ulceration. The inclusion of large amounts of nicotinamide, thiamin chloride, and riboflavin in the diet of persons suffering from the disease will produce cessation of the symptoms and restore the sufferer to health.

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News Notes

Mess Officer and Dietitians. A revision of AR 40-590 was published August 29, 1944. Under paragraph 16—Mess Management, the duties of the mess officer and dietitians are outlined as follows:

"c. *Mess officer and dietitians.* (1) The mess officer will be directly responsible to the commanding officer for the proper operation of the mess, including mess sanitation and assignment of mess personnel. The mess officer will be responsible for the procurement of food and supplies, the maintenance of accounts and records relating to the mess, constant supervision of messes, and the training of civilian and enlisted mess personnel in all phases of mess operation. (2) The commanding officer may have, in addition, Medical Department dietitians whose duties will be the planning of all menus for patients, the requisitioning through the mess officer of all food supplies and equipment, the supervision of preparation and serving of food to patients, the instruction of special diet patients, assistance in the supervision of mess sanitation, and the maintenance of accounts and records of the dietetic department. All mess records will be made available to the head dietitian. The head dietitians will regularly inspect stocks of food on hand in order to prevent food spoilage and to insure proper turnover of slow-moving stocks."

Association for the Advancement of Science. The program of the September 13 meeting, Cleveland, included the following papers of special interest to dietitians, under the subject, "The Role of Science in United Nations Collaboration for the Improvement of Nutrition and Agriculture After the War": "The Problems We Face in Nutrition," Dr. Frank G. Boudreau, director, Milbank Memorial Fund; "The Problems We Face in Food Production," Robert Rae, professor of agriculture, University of Reading, England; "The Problems We Face in Economics," P. Lamartine Yates, British Ministry of Agriculture.

Nutrition Instruction at the Harvard School of Public Health. The Harvard School of Public Health through its Department of Nutrition is expanding its teaching activities in nutrition. Nutrition A, consisting of 3 lectures per week for the first semester (November through February) covers the following subjects: proteins; fats; carbohydrates; minerals; vitamins; water; foods as sources of nutrients; nutritional requirements versus recommended allowances; losses of food nutrients in processing and the enrichment and fortification of foods; food habits; nutrition in relation to pregnancy, lactation, childhood, adolescence, dental health, medicine, and blood regeneration; the use and abuse of commercial vitamin and mineral preparations; food fads versus facts; food budgeting; evaluation of nutritional status—dietary histories, laboratory methods, clinical studies, surveys; evaluation of diets; mass feeding; nutrition in industry; the nutritionist in a public health program; tools for nutrition education; nutrition problems of rehabilitation; nutrition in preventive medicine and public health. Nutrition B is offered throughout the entire year and consists of practical experience, under supervision, in food clinics, in a community nutrition project, or in experimental nutrition—depending on the individual's qualifications and interests. Nutrition C, a weekly journal club and seminar in nutrition covering both fundamental and applied nutrition, meets throughout the academic year.

Implications of Nutrition and Public Health in the Postwar Period. An all-day conference under the auspices of the Research Laboratory, Children's Fund of Michigan, is being held in the auditorium of the Horace Rackham Memorial Building, Detroit, November 3. The program includes: "The International Implications of Freedom From Want of Food," Dr. Frank G. Boudreau, director, Milbank Memorial Fund, and chairman, Food and Nutrition Board, National Research Council; "The importance of Proteins in Resistance to Infection," Dr. Paul R. Cannon, professor of pathology and chairman, Department of Pathology, University of Chicago; "Protein Deficiencies in Man," Dr. L. Emmett Holt, Jr., Department of Pediatrics, Johns Hopkins University School of Medicine; "Maintaining Dental Health," Dr. Phillip C. Jeans, director, Department of Pediatrics, School of Medicine, State University of Iowa; "Vitamins and the Health of the Nation," Dr. Charles G. King, scientific director, Nutrition Foundation, Inc.; "Food Production for Better Health and Longer Life," Dr. L. A. Maynard, director, School of Nutrition, Cornell University; "Our National Diet and Future Health," Dr. E. V. McCollum, professor of biochemistry, Johns Hopkins University; "Role of Food Technology in Improving Nutrition," Dr. Roy C. Newton, vice-president, Swift and Company; "Nutritional Reconditioning of Children in Occupied Countries," Dr. Harold C. Stuart, director, Department of Maternal and Child Health, School of Public Health, Harvard University; and "Research and Nutrition for Human Health," Dr. Frederick F. Tisdall, consultant on nutrition, Royal Canadian Air Force. A cordial invitation is extended to all who are interested to attend this conference.

Canadian Home Economists in Business. The following definition for "Home Economics Women in Business," according to *the* Canadian Home Economics *Newsletter*, for September, 1944, was drawn up for the consideration of the Canadian Home Economics Association executive meeting in August 1944: "A Home Economics Woman in Business is any person who has had university home economics training and may be engaged by a firm operating for profit." The report lists titles of such persons as:

1. Dietitian—commercial.
2. Journalist—newspapers, magazines, advertising, radio.
3. Nutritionist.
4. Home Service Director for a business firm—equipment, finance, foods, textiles, general.
5. Commercial demonstrator and sales promoter using educational publicity.
6. Research worker or laboratory technician employed with a business firm.
7. Free lance consultant in any of the above capacities.
8. Manager of own business in home economics field.

HEWIB committee members are making surveys in their own provinces. The committee felt that this survey should be as complete as possible and they are attempting to include all home economists except teachers, homemakers, institution dietitians and dietitians in the forces, whether a member of the C.H.E.A. or not.

Under *Recommendations* the report adds that "arrangements had been made so that members purchase from the HEWIB committee chairman copies of the booklet, *Preparation for the Business Field of Home Economics.*"

Presentation of Analytical Data on Cooked Foods. In a letter addressed to "all laboratories engaged in studies on the losses of nutrients during cooking of food," dated October 7, Dr. Paul L. Pavcek, secretary, Committee on Food Composition, National Research Council, wrote as follows:

"In connection with presentation of analytical data on cooked foods it becomes increasingly apparent that additional information would be highly desirable. Since, during the cooking operation, rather significant changes occur in the total solids content of liquid and solid phases, it would appear that data bearing on this point should be included.

"The Committee on Food Composition wishes to suggest that the following information be obtained on a representative lot to correspond with each food and each method studied: "*Yield*" *Data* in which (a) the weight and total solids content of raw product, (b) the weight and total solids content of drained cooked product and (c) volume, specific gravity and total solids content of the liquid portion be given. For example, 135 pounds (7½ bushels) of raw spinach of 7.50% solids were boiled for 10 minutes with 25 gallons of water containing 3 pounds of salt. After straining, 25 gallons of liquid (Specific Gravity 1.040) of 1.30% solids content and 100 pounds of drained cooked spinach of 10.00% solids content resulted.

"Such additional information will aid greatly in making calculations of cooking losses based on the original raw product, and it is hoped that you can include such data as part of your studies."

Better Diets. H.R. 5265, introduced, by request, by Representative Pace, Georgia, provides for the development of better diets and an improved nutritional status for the people of the United States.

Extension of Social Security to Nonprofit Institutions. An article which appeared in the August issue of the *Social Security Bulletin*, distributed September 18, entitled "The Desirability of Extending Social Security to Employees of Nonprofit Institutions," states: "The Social Security Board believes that, in justice to an occupational group which stands in serious need of insurance protection, the Social Security Act should be amended to provide old-age and survivors insurance for the employees of nonprofit institutions. The Social Security Board has also recommended that the present social insurance program be broadened to cover insurance against wage losses due to disability, and medical and hospitalization insurance. Employees of nonprofit institutions would benefit from such broadened insurance protection." Representatives of several organizations have gone on record as favoring extension of the federal program, including the American Nurses' Association, American Hospital Association, and American Association of Social Workers. According to this article, in peacetime nonprofit institutions had little difficulty in attracting and retaining competent personnel because of the high

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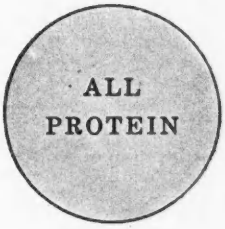

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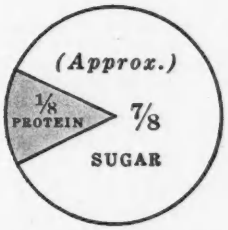

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degree of job stability which they offered. Now the high wages and social security offered in jobs in war industry are proving more attractive than job tenure, and nonprofit institutions are suffering serious losses in personnel.

National Food Situation. With one fifth fewer chickens raised on farms in 1944 than in 1943, marketings of poultry meat during the fall are below those of last year.

Except for 1942 and 1943, farm egg production for the first 8 months of 1944 exceeded the 12-month total in any previous year on record, but is lower in the fourth quarter, reflecting the smaller number of chickens raised last spring.

A chart in the August *National Food Situation*, prepared by the Bureau of Agricultural Economics, USDA, showed that the per capita consumption of fresh vegetables, including melons, increased about one sixth in the period 1909–43 while the consumption of commercially-canned vegetables more than doubled. On the other hand, per capita consumption of potatoes decreased about one third and sweet potato consumption declined about one fourth.

WFA increased in August the percentages of 4 grades of canned salmon to be reserved from the current pack for delivery to government agencies. The 1944 pack is running considerably short of the preseason estimate.

To alleviate losses to apple growers in the North Atlantic seaboard states, caused by the hurricane, WFA authorized the purchase of 500 cars (about 315,000 bu.) of apples for distribution to federal, state, and county hospitals and other institutions, and for the school lunch program.

For the first time since 1941 fresh apples from the United States will be for sale on markets in England and other parts of the United Kingdom this winter, WFA has announced.

From total allocable supplies of citrus fruit, for the period July 1, 1944–June 30, 1945, U. S. civilians will receive slightly more than 83%, which is approximately 8% (in amount) more than they were allocated during 1943–44. U. S. military and war services will receive slightly more than 12%, while the remaining 5% will go to our territories, allies, and other friendly nations. Production increases are estimated for all citrus fruits.

Set-aside percentages for packers on canned apples have been increased from 65 to 66%, apple sauce 23 to 37%, fruit cocktail 75 to 78%, peaches 74 to 76%, pears 78 to 80%, pineapple 60 to 61%, and pineapple juice 64 to 66%. Canned sauerkraut has been reduced from 36 to 34%. As the increases will come from greater production in most of the products, civilian supplies are not expected to be changed materially.

A chart on the cover of the August *Demand and Price Situation*, USDA, shows that between 1938 and 1943 industrial production increased 164%, the wage income of industrial workers rose 235%, and the number of industrial workers increased 75%. This indicates that production per worker has increased somewhat more than 50% during the war, while the average wage income per worker has risen about 90%. Factory payrolls have declined 5% since November 1943. The cost of living index for June 1944 was 125.4 (1935–39 is considered as 100). This is the highest figure since June 1927, slightly above June 1943, and 1% above March 1944. The index of food costs for June 1944 was 135.7, 4% below June 1943 but 1% above March 1944.

According to fish food experts of WFA and the U. S. Fish and Wildlife Service, short supplies of oysters are expected this year because of labor shortages in the producing areas. Large oysters especially will be limited in quantity. High prices paid for oysters last season caused many oyster planters to market their stocks of both large-sized and undersized oysters. Considerable quantities of fresh oysters have been used by military forces in this country. It is expected that few will be canned this year.

Quotas limiting the sale of cottage, pot, and baker's cheese by processors were eliminated by WFA October 1.

Utilizing Lower Grades of Beef. A booklet of information on cooking utility beef has been prepared by the National Live Stock and Meat Board, 407 S. Dearborn Street, Chicago 5, entitled "Beef Available for Civilians." The booklet contains general information as well as an abundance of excellent, family-size recipes.

The August issue of *Hotel Monthly*, available from John Willy, Inc., 950 Merchandise Mart, Chicago 54, at 30 cents, carries an article entitled "Change Your Cooking Methods to Handle Lower Grades of Beef." General directions are included, also several recipes for such dishes as beef pie Oklahoma, beef and kidney pie, paprika beef goulash, etc.

Meat scientists of USDA explain that a great deal of the utility beef now on the market is grass-fed rather than grain-fed. The yellow color of the fat, therefore, is largely carotene from grass or other carotene-rich feed the animal has eaten, and therefore the yellow beef fat is likely to be superior to white in food value because of the vitamin A it contributes.

Ice Cream Standards. Action on proposed standards under the Federal Food, Drug, and Cosmetic Act for ice cream and related products has been postponed at the suggestion of WFA, according to an August 31 announcement by Federal Security Administrator Paul V. McNutt. The postponement was based on the statement of the War Food Administrator that, in view of the scarcity of milk fat and milk solids-not-fat which necessitated the issuance of FDO 8, restricting the quantity of dairy ingredients used in ice cream, it would be well to delay the effectiveness of definitions and standards of identity under the Federal Food, Drug, and Cosmetic Act until such time as milk fat and milk solids-not-fat become available in greater quantities. Administrator McNutt indicated that the record of the 1942 public hearings would support a standard calling for a minimum of 12% milk fat and that he was unwilling to approve a lower limit.

WFA to Make Cold Storage Space Available. With total occupancy of the nation's cold storage warehouses at the highest level in history, WFA has taken further steps to ensure sufficient freezer space to handle the products most essential to the war. Limits placed on stocks of frozen fruits and vegetables which may be stored in any warehouse were made necessary by the tremendous growth of the frozen food industry, which has led to the use of a disproportionate share of freezer space for these commodities, according to WFA. There has been an expansion of 48,000,000 cu. ft. in warehouse capacity since 1941, but it has not kept pace with the increased demand for space. A year ago all products not requiring refrigeration were banned from the cold storage houses and regulations on the length of time all products may remain in storage have been in effect since spring. Storage of small lots is extremely wasteful of public warehouse space, because each lot must be piled separately. A new prohibition against storing lots of less than 300 lb. is intended to stop this wasteful practice without harmful effect, as owners of small lots can use them or store them in their own private refrigerators or in frozen food locker plants, not covered by the order. According to WFA, since the beginning of the war storing of small lots of food has greatly increased, some apparently due to hoarding. Restrictions against storing frozen poultry in barrels and baskets is also designed to prevent wasteful use of space. The order limiting to 10 months the time any commodity may remain in storage will be rigidly enforced.

Frozen Food Locker Plants. Every state in the Union now has one or more frozen food locker plants, according to K. F. Warner, extension meat specialist, USDA. Altogether there are 5282, or an average of about 110 per state. In 7 years the total number of such plants has more than quadrupled.

Quick-Freezing of Meat. When pork sausage is to be preserved by quick-freezing, omit the salt but add the other seasonings, advises the New York State Experiment Station, as quoted in the September 25 issue of *Food and Home Notes*, USDA. Studies to determine why sausage becomes rancid more quickly than pork itself led to the conclusion that salt hastens oxidation in ground meat and leads to rancidity of the fat, but that spices like pepper, sage, mace, and ginger seem to have the opposite effect of actually "holding back" rancidity. It is also reported that ground pork and ground beef should be frozen as soon as possible after slaughter. The longer the meat was held, the more quickly it oxidized and the fat turned rancid in frozen storage.

Dehydrated Meat. A description of 8 methods of dehydration and their effect on the nutritive value, palatability, and other qualities of dehydrated meat is presented in a report of experiments sponsored by USDA's Agricultural Research Administration, designated as Circular 706, "Meat Dehydration, A Report of Research Work for Its Commercial Development." A limited number of single copies of the report are available free from USDA, Washington 25. Copies may be purchased from the Superintendent of Documents, Washington 25, at 15 cents each.

Egg Specifications and Standards. Changes in minimum and maximum weight specifications for wholesale grades of eggs, to simplify grading and to provide a sharper line of demarcation between the weights for certain classes, were announced by WFA September 19 as follows: Extra Large, 49 lb. average net weight per 30 doz., basic minimum for individual eggs, 25 oz. per doz.; Large, 45 lb. and 23 oz., respectively; Medium, 40 lb. and 20 oz., respectively; and Small, 34 lb. or less per 30 doz. with no minimum limit for individual eggs. The changes apply to all wholesale grades except U. S. Dirties and U. S. Checks, and supersede tentative U. S. standards and weights for wholesale grades for shell eggs issued April 12, 1943, which designated 8 instead of the present 4 categories.

An excellent wall chart in color, prepared by the New York State College of Agriculture and Colorado State College and released by the Poultry and Egg National Board Consumer Information Service, 308 W. Washington Street, Chicago 6, shows characteristics of retail grades of eggs in the shell (candling appearance), broken out, hard-cooked, and fried.

Butter manufacturers were not required by WFA to set aside for government purchase any of their October output, nor will they set aside any of their output in succeeding months until spring when production will be seasonally higher. Government purchases are expected to total 29% less than in 1943. The smaller

Cereals in Obesity Diets

In the more conservative reducing diets, such as that of Cutting[1] or that of Beardwood,[2] cereal breakfast foods (whole-grain, or enriched, or restored to whole-grain values of thiamine, niacin and iron) fill a well merited place.

Beardwood recommends a total intake of 1000 calories per day, while Cutting suggests 960 calories. In both cases the daily food intake is to be equally distributed over three meals. Thus the morning meal calls for 333 calories and 320 calories respectively.

In such diets cereals are well applicable. When 1 oz. of cereal (ready to eat or to be cooked) is served with 4 oz. of skim milk and 1 scant teaspoon of sugar, this dish, appreciated by the patient for its palate appeal, presents a total of 159 calories made up as follows: cereal (average) 105 calories, skim milk 38 calories, sugar 16 calories. The remaining 174 or 161 calories, respectively, allow for fruit, one egg, one-half slice of bread, and beverage (either skim milk, coffee, or tea, the latter two without cream or sugar). The advantages of cereals so served, however, extend beyond their relatively low caloric value:

a) The combination of cereal, skim milk, and sugar contributes to the satisfaction of a number of nutritional needs which the obesity diet, no matter how drastic, must satisfy. This noteworthy contribution may be gauged from these (composite average) values of such a serving:

Calories	**159**
Protein	**7 Gm.**
Carbohydrate	**31 Gm.**
Fat	**.64 Gm.**
Thiamine	**0.189 mg.**
Riboflavin	**0.297 mg.**
Niacin	**1.813 mg.**
Calcium	**160 mg.**
Iron	**1.88 mg.**

b) Cereals are available in a great variety of taste and form, permitting of variation from day to day, thus lessening the frequently encountered rebellion against the monotony of reducing diets.

(1) Cutting, W. C.: Manual of Clinical Therapeutics, Philadelphia, W. B. Saunders Company, 1943, p. 487.
(2) Beardwood, cited by Mullen, E. A.: Hand-Book of Treatment, Philadelphia, F. A. Davis Company, 1943, p. 377.

The presence of this seal indicates that all nutritional statements in this advertisement have been found acceptable by the Council on Foods and Nutrition of the American Medical Association.

CEREAL INSTITUTE, INC.
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purchases were made possible because of a carry-over in stocks from last year. In all, 95 out of every 100 lb. of our butter supply this year will be consumed by Americans—80 by U. S. civilians, 15 by U. S. armed forces.

WFA has announced that it has taken the following steps to improve the butter situation for civilians: It has aided and encouraged farmers to produce as much milk as possible, helped to get machinery needed on dairy farms, to recruit and train dairy labor, and to obtain feed supplies for dairy farmers. A dairy production payment program was initiated and during the drought last summer additional payments were made to aid dairymen in solving feed problems occasioned by unseasonally poor pastures. In addition, WFA has sought to check the diversion of milk from butter by limiting the amount which can be used in various dairy products, and even fluid milk sales. No dairy products are being stockpiled for relief feeding at present, with the exception of some roller-dried nonfat milk solids which currently are in good supply. A chart entitled "Where Is Our Butter Going?" prepared by WFA, is available from the Office of Distribution of that agency.

Cooking With Nuts. The big crops of nuts promised this fall will be a boon to the cook who knows how to use them to add flavor, food value, and variety to many dishes, suggests USDA, as reported in *Food and Home Notes*, September 25. One point mentioned is the large amount of fat in most nuts: pecans over 70%; English walnuts, hickory nuts, filberts, and butternuts over 60%; black walnuts and almonds over 50%. It is often possible to substitute nuts for part of the fat in a recipe. In making pie crust, finely ground pecans may be used for half the fat called for in the pastry recipe. Add ground pecans to the fat, then mix and bake in the usual way. This pastry is especially good with cream or custard filling. Nuts also may be used to add richness to poultry stuffing, to croquettes, creamed chicken or fish, or to biscuits, muffins, waffles, cake, or cookies. In adding nuts to waffles, biscuits, or cookies, use one fourth to one half cup of nuts cut up but *not* finely ground, to each cup of flour. Generally the nuts are added either to the dry ingredients or to the batter. Since nuts have a tendency to absorb moisture, when using them for bread or cake place the nuts in boiling water a few minutes, then drain and add to the mixture. Mild-flavored nuts like almonds or English walnuts are better if first roasted or fried. For ice cream or candy, they give the best flavor if roasted and salted.

Fluorine Spray Residue on Apples and Pears. Acting under authority of the Federal Food, Drug, and Cosmetic Act, Federal Security Administrator Paul V. McNutt has promulgated an order setting a tolerance of 7 mg. per kilogram of fluorine in spray residue on apples and pears, an increase over the informal tolerance for fluorine announced in 1938. Administrator McNutt stated that the higher tolerance is justified on the basis of our present knowledge but that scientific work on the subject will be continued.

New Rules Governing Labeling of Foods. The London Ministry of Food has stipulated certain requirements which must be met by the labels of all prepacked foods. The labels must specify the name and address or registered trade mark of those for whom the food is packed, and the name of the food. Foods containing more than one ingredient must show the names of the ingredients in order of proportion in which they were used and the minimum quantity of food in the package. Claims must not be made on the labels or in advertisements of foods specified as containing vitamins or minerals unless supported by a statement of the nature of the vitamin or mineral present and the quantity. Fruits and vegetables are exempt from the above unless canned or boiled.

In the United States the following material concerned with the labeling of foods was received from the Office of Distribution, WFA, Washington 25 in October: "Canned Food Labels in Terms of U. S. Grades" and "Continuous Factory Inspection and Labeling of Canned Fruits and Vegetables in Terms of U. S. Grades," published by the Division of Research, National Better Business Bureau, reprinted by WFA; "Label Statements and Identification of Processed Fruits and Vegetables Packed Under Continuous Factory Inspection," USDA; a map of "Processing Plants Approved to Pack Products Under Continuous Inspection and Processed Foods Inspection Offices," WFA; "Check List of Standards for Farm Products of the Food Distribution Administration," USDA; and "A Consumers' Guide to U. S. Standards for Farm Products." by Catherine M. Viehmann, Information Specialist, Office of Distribution.

Rationing and Price Control. The use of one-point blue tokens was discontinued by OPA October 1. Removal of practically all canned and bottled vegetables and fruit spreads and specialties from the processed foods rationing program September 17 made this step possible. Blue points are still required for canned fruits, canned juices, canned tomatoes, catsup, and chili sauce.

A subsidy will be paid to processors on canned tomatoes this year to hold prices to civilians at 1943 levels and to assure maximum production needed for the war effort. The new ceilings, which went into effect September 5, will result in no change from 1943 in the average retail price for canned tomatoes.

Price Administrator Chester Bowles, in a letter to Representative Clarence Cannon, chairman of the House Appropriations Committee, September 5, asked Congress to remove its ban on use of "Government standards" or so-called "A. M. A. grades" in pricing canned fruits and vegetables because that ban "makes impossible proper enforcement of price ceilings on canned fruits and vegetables and makes the American consumer the victim of widespread price increases." The letter stated: "There has always been confusion in the discussion of the grade issue because it is associated in the peoples' minds with 'grade labeling.' In asking your Committee to act, I wish to make it clear that any proposed use of U. S. Standards by OPA has no connection with forcing 'grade labeling' upon the canners." Pointing out the need for definite written statements of quality of the various grades of canned fruits and vegetables, Mr. Bowles said that typical prices for the 1944 pack show the price for the "extra standard" grade exceeding that for the standard grade by 8 to 16%, and the price for the "fancy" grade exceeding the "standard" price by 17 to 30%. He added, "These price differentials between grades being as large as they are, it is obviously important to see that goods which are sold as being of a certain grade actually are of that grade. If this is not done, the price increases resulting from the upgrading will, under mark-up control, be reflected at retail."

Savings to housewives of about $15,000,000 annually in what they pay for butter are anticipated as a result of a broad campaign by OPA to eliminate upgrading, *i.e.*, selling one grade of butter at the price of a higher grade. It has been estimated that normally only 10% of all butter produced in the United States is the 93 score top grade. A check in June of this year, however, disclosed that at that time an estimated 90% of all butter was being sold as 93 score. The OPA states that it has the cooperation of the industry's premium butter producers and distributors who want traditional standards of the trade maintained.

Subsidy payment to producers will hold the general level of consumer prices of canned snap beans of the 1944 pack to that of last year.

Increases in the price of select mild-cured salmon, used as a raw product for smoked mild-cured salmon, will result in a 4 or 5 cents per pound increase in the finished smoked product to consumers.

New ceiling prices to processors on the 1944 pack of canned sweet corn, after the subsidy is subtracted, should mean average retail prices approximately the same as last year's.

New ceilings for the 1944 pack of Bartlett pears produced in California and packed either diced or in peeled halves or quarters will mean an average increase of about 2 cents per No. 2½ can at retail.

To get industry's advice on practical plans for food price control during the reconversion period, officials of OPA's Food Price Division held a meeting September 26–29 with the food industry to discuss food pricing steps to be taken by OPA after the defeat of Germany. Present at the meeting were representative growers, manufacturers, and distributors of food, OPA personnel, and officials of WFA.

A new edition of *Directory of Commodities and Services*, dated August 1, 1944, including a directory of key operating officials of the various price units in OPA's national office, was available October 1 from the Superintendent of Documents, Washington 25, at $1. Six monthly supplements to the directory are supplied to purchasers without further charge.

Shipment of Perishables by Air Freight. A "pioneer survey" was released in September by USDA and the Edward S. Evans Transportation Research, Washington, describing an all-cargo airline, operating on a contract carrier basis, for moving perishable cargoes by air freight. The study demonstrates that a bulky, low-value, perishable commodity, such as lettuce, can be successfully marketed even at a slightly higher price due to cost of air transportation, thus opening up a new field for sky-hauling of a substantial tonnage of agricultural commodities. Lettuce can be flown from California to markets in Detroit and other nearby cities for approximately 3¾ cents more per pound net than the surface-transported lettuce. Four test shipments were made via air express over T.W.A., and the air-borne lettuce sold readily, though priced at 5 cents per head higher in the four retail stores in Detroit. Lowered costs are likely after the war, according to the report, by using lighter and more efficient shipping containers, new nonstop airways between distant cities, and airplanes designed specifically for hauling commercial cargoes. Copies of the study are available on request to the Edward S. Evans Products Company, 15310 Fullerton Avenue, Detroit 27.

Industrial Feeding. An article reprinted from the June *Mill and Factory* entitled "Food for Workers," by Dr. Robert S. Goodhart, chief, Industrial Feeding Program Division, Civilian Food Requirements Branch, Office of Distribution, WFA, has been distributed by the latter bureau. In a list of steps to be taken in installing or expanding industrial food services, is the suggestion that an experienced dietitian be hired "to assure adequate and efficient planning and preparation, and to direct nutrition educational activities." The experience of Frances B. Floore, Eastman

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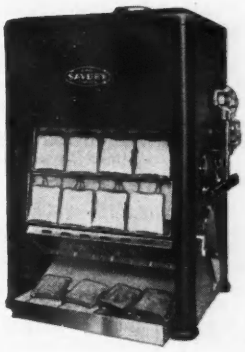

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War-time production of these fine appliances has been uninterrupted with the result that today's Savory Toasters are better than ever—and increased production quotas are now making reasonably prompt deliveries available to many civilian food service operators.

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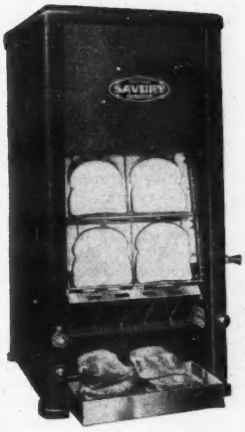
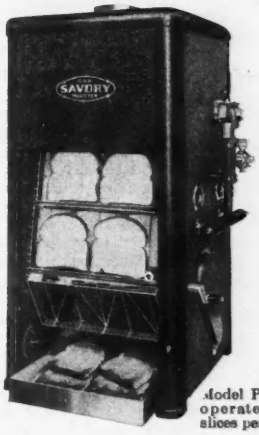


Model CT.2, all-electric, 360 slices per hour



Model PD, gas-operated, 360 slices per hour

Model CT-4, all-electric, 540 to 720 slices per hour

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Kodak Company, and that of Bernice Harris, R. J. Reynolds Tobacco Company, in feeding industrial workers, are mentioned.

The September 8 *Industrial Nutrition Service*, WFA, contains recipes for preparing frozen baked beans and frozen spinach. Attention is called to the fact that the use of frozen vegetables, many of which are available now in plentiful supply, is a labor-saving aid.

Nutrition Program Materials. BHNHE has prepared a folder of green and ripe tomato recipes, "Tomatoes on Your Table," which may be obtained free from the Office of Information, USDA, Washington 25.

Another folder, "Eat a Good Breakfast to Start a Good Day," is also obtainable free from USDA.

The Poultry and Egg National Board, 308 W. Washington Street, Chicago 6, has distributed a booklet on chicken—buying and cooking guide, tested recipes, cooking timetable, care of poultry, and carving.

Naval Medical Research Institute Study. Research Project X-184, "Nutrition Survey of the Mess at the Naval Training Station, Bainbridge, Maryland—22 February to 6 March 1944," has been published by the Naval Medical Research Institute, National Naval Medical Center, Bethesda, Maryland. The study was made by Lt. Comdr. C. M. McCay, H-V(S), USNR, Lt. Mary B. Pine, W-V(S), USNR, Lt. (j.g.) G. H. Davis, H-V(S), USNR, Ensigns Gladys E. Haugen and June Sullivan, W-V(S) (H), USNR. A study of meals served in three mess halls at Bainbridge for a 2-week period was made. Samples of the meals were collected and analyzed at the Naval Medical Research Institute. The average daily nutritive values of food as served in each of these mess halls were tabulated and compared with the N.R.C. allowances. It was found that the residue of edible food from the trays averaged 110 gm. dry matter (591 calories) daily per man, containing 20 gm. protein, 35 gm. fat, and 49 gm. carbohydrate. The "typical man," it is reported, eats no more than 3000 calories per day in the general mess. Usually the amount is less by 100 to 200 calories. The food bought by the men in Ship's Service, largely carbohydrates, amounts to about 400 calories per day. Thus, one eighth of the food consumed in a large naval station is bought by the enlisted man himself outside the regular mess. In the method of sampling used in the study the weight of food served from the steam-table is divided by the number of men served, to determine the composition of a typical meal. Data concerning the food habits of men were assembled by determinations of the percentage refusing specific foods offered by the mess. The losses in peelings from vegetables in the course of preparation were determined under actual operating conditions. The use of large amounts of fresh milk as a beverage and the availability of fresh vegetables at one meal daily in a "raw bar" are two features of Bainbridge operations that are said to provide superior allowances of certain nutrients.

Food Storage and Service on a Hospital Train. A release from the Technical Information Division, War Department, describes the storage and service of food on hospital trains which take wounded veterans from Stark General Hospital, Charleston, S. C., to hospitals in other parts of the country. Fresh fruits, vegetables, milk, and butter are stored in ice chests, and a sufficient supply for the entire trip is taken on board before the trains leave Charleston. Ordinarily only one kitchen car, in which the food is stored, is included on every hospital train, from which meals are served to ten ward cars. One mess officer, one mess sergeant, four cooks, and ten kitchen police make up the mess attendants for each complete train. Equipment consists of the above-mentioned ice chests, two No. 5 Army Field Ranges (coal-heated), hot and cold water, with facilities for sterilizing the silverware, trays, and cooking utensils.

Diet and Resistance to Cold. Writing in the New York *Times*, September 3, Waldemar Kaempffert in his column "Science in Review" reports that under the direction of Dr. R. W. Keeton, a group consisting of Professor M. K. Fahnestock, some 15 doctors, engineers, physiologists, psychiatrists, and nutrition experts at the University of Illinois have been studying the relation of diet to resistance to cold. The study was made at the request of the Army and Navy Departments who wanted detailed information, not only because soldiers must fight in every latitude but because aviators fly for hours at altitudes where the temperature may be as low as −70°F. An investigation was therefore made at the behest of the Committee on Medical Research of the U. S. Office of Scientific Research and Development.

Though the results have not yet been published, it is reported that meals high in carbohydrates (starches and sugar) or in fats were an aid in maintaining body temperature and in reducing the effect of cold on the coordination of nerves and muscles. Eating 3 small meals at 2-hour intervals during an 8-hour imprisonment in an "icebox" at −20°F. proved to be better than eating one large meal in the middle of the period.

Workshop for Lunchroom Directors. A conference sponsored by the Florida State College for Women and the Florida State Department of Education, for the Southeastern Region, was held during the first 3 weeks in July at Tallahassee. Twenty-five representatives of the Departments of Education of Kentucky, Mississippi, North Carolina, Louisiana, Georgia, and Florida attended the meeting. Among the subjects discussed were the following: the integration of nutrition information with the school lunch; basic information on layouts and lunchroom equipment; fundamental sanitary practices; methods for sound financial management; and patterns for nutritionally adequate menus produced with minimum equipment and limited skill. Constance Hart, Board of Education, Rochester, N. Y., was counsellor of the program and lectured each day on the subject of the school lunchroom.

Pamphlet Series on Latin America. A series of pamphlets on ten of the American republics is now available at a nominal charge from the Superintendent of Documents, Washington 25. Prepared by the Office of Inter-American affairs, the pamphlets supply basic information on Argentina, Bolivia, Brazil, Chile, Columbia, Ecuador, Guatemala, Mexico, Uruguay, and Venezuela. Similar publications on the remaining Latin-American republics are scheduled for the near future. Written by experts and extensively illustrated with maps, charts, and pictographs, the pamphlets offer a rapid survey of the history, geography, population, resources, communications, and economic and social organization of the nations, as well as many other details.

Dr. McCollum Again Honored. For his outstanding research on vitamins, Dr. E. V. McCollum, professor of biochemistry and head of the School of Hygiene and Public Health, Johns Hopkins University, has been presented the 1944 Borden Award in the field of nutrition, consisting of $1,000 and a commemorative gold medal. In selecting him as the recipient of the Borden Award, the citation of the American Institute of Nutrition read: "His contributions to our knowledge of the vitamin content of milk and of the high nutritive value of 'protective foods,' one of which is milk, have served as foundation stones for improving through foods and nutrition the health of the human race." Professor at Johns Hopkins since 1917, Dr. McCollum is past president of the Institute of Nutrition and the Society of Biological Chemists, a member of the National Advisory Council and the Vitamin Advisory Board of the U. S. Pharmacopeiea, and holds membership in numerous other scientific societies.

Wiley Anniversary. The hundredth anniversary of the birth of Dr. Harvey W. Wiley of "pure food" fame was commemorated at the meeting of the American Chemical Society, New York, September 12. Dr. Wiley was chief of USDA's Division of Chemistry, 1883–1901, when it became the Bureau of Chemistry, of which he was chief until 1912. The Food and Drugs Act, passed in 1906, was largely a result of his continuous crusade against impure and adulterated foods and drugs. Dr. Wiley established zones in which sugar beets could be successfully grown in the United States and otherwise did much in promoting that industry. His work on the sugar sorghums is also of great importance, and he played an important part in organizing the Association of Official Agricultural Chemists. Dr. Wiley had served as professor of chemistry at Purdue University, and as state chemist for Indiana. He held many degrees, and was the author of a number of books on chemistry, 60 government bulletins, and more than 300 scientific papers.

Hawaii Dietetic Association. Members of the association were guests of the Executive Board on September 3 at the Outrigger Club where complimentary copies of *Cooking for a Crowd*, a collection of recipes contributed by the members, were distributed. Work is progressing on a new diet manual being prepared by the Diet Therapy Committee members.

Officers for the year are: president, Lillian Elsholtz; vice-president, Carol Mitchelson; treasurer, Mary Murai; secretary, Frances Janda. Committee chairmen include: Administration, Dorothy Hall; Professional Education, Mrs. Marjorie Abel; Diet Therapy, Marian Weaver; Community Education, Mrs. Helen McGill. Miss Janda was appointed to represent the association on the Territorial Nutrition Committee.

Members were delighted to learn of the association's affiliation with the American Dietetic Association.

A Placement Bureau, now in operation, places local and mainland dietitians in positions in the territory at a fee of $2. Lorene Kulas, Queen's Hospital, Honolulu 39, T.H., is in charge. At present servicemen's wives are not being allowed to hold positions in the territory.

Mrs. Regina Jacobs has resigned her position at St. Francis Hospital and is succeeded by Chrissa Wendt, formerly of Glen Lake Sanatorium, Oak Terrace, Minn.

Mrs. Antoinette Faaborge, dietitian at Kamehameha Boy's School, is on leave of absence.

Marjorie Wong is doing part-time work, teaching student nurses at Kuakini Hospital.

Massachusetts Dietetic Association. The first fall meeting of the association, of which Elda Robb, Simmons College, is president, was held September 26 at Simmons College. Dr. John Timm, director, School of Science, spoke on "Putting Tagged

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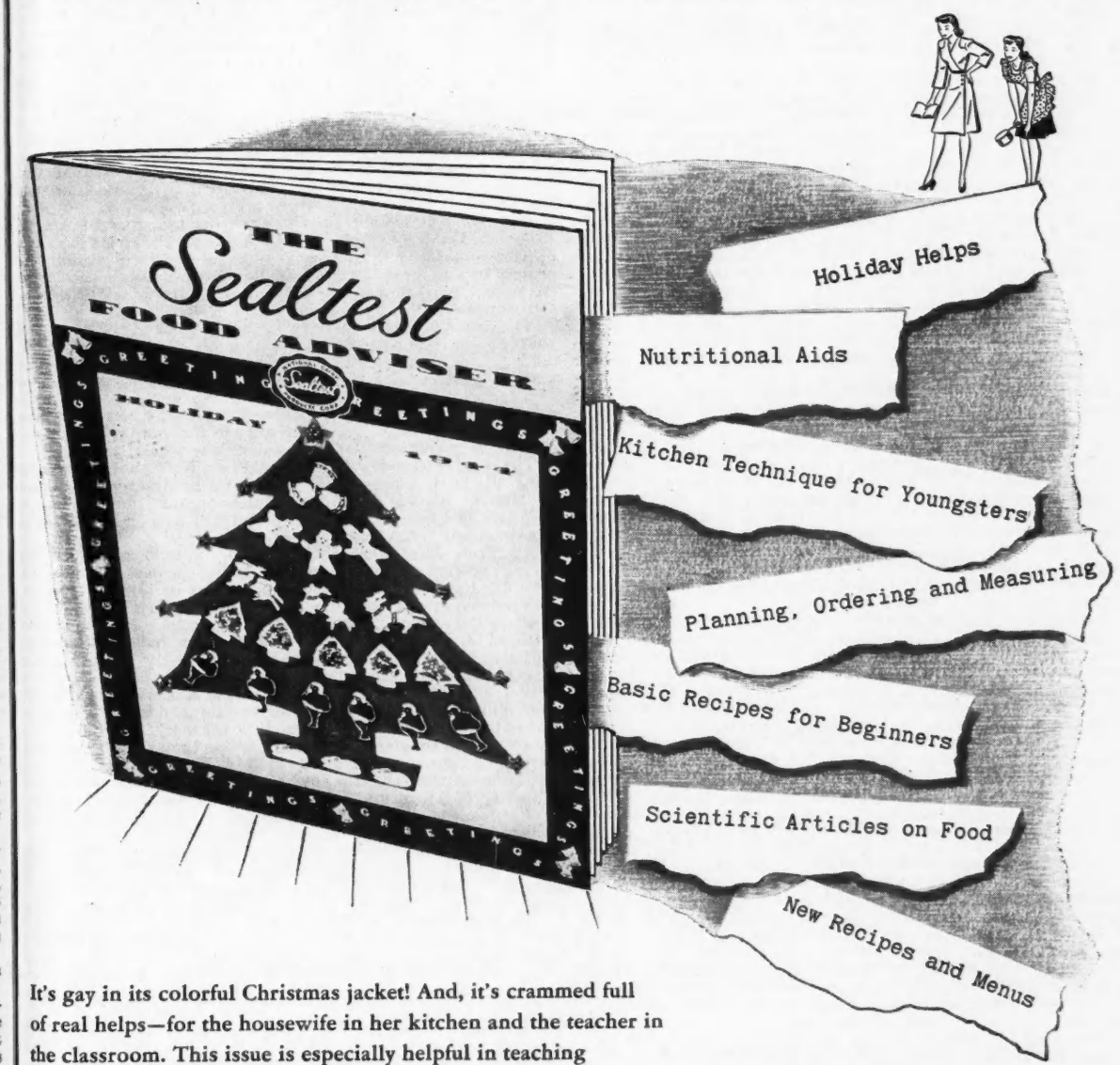

It's gay in its colorful Christmas jacket! And, it's crammed full of real helps—for the housewife in her kitchen and the teacher in the classroom. This issue is especially helpful in teaching beginners. There's an article on Kitchen Technique for Youngsters; one on Planning, Ordering and Measuring; and a chapter on Basic Recipes for Beginners.

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Atoms to Work." The October 31 meeting had as speaker Dr. Harold C. Stuart, Harvard School of Public Health, who discussed "Experiences With the Red Cross and With Groups in Detention in Europe."

The fund to which friends of Mary Spalding contributed in her honor is to be used in the new graduate program in public health at Simmons College. Miss Spalding and the committee have awarded a scholarship to Kathleen Scobie, Starling-Loving Hospital, Ohio State University, who is enrolled in the course this year. The remainder of the fund will be used as a revolving loan for students in the program in connection with the summer field work.

Recent appointments include: Elizabeth Kingsbury Caso, instructor of nutrition, Harvard School of Public Health, as supervisor, and Margaret G. Phillips and Jean Lesperance, nutritionists, Newton Nutrition Clinic.

Dr. and Mrs. Cutting Broad Favour announce the birth of a daughter, May 27. Mrs. Favour was formerly community nutritionist, Newton.

The following are student dietitians at Beth Israel Hospital for the coming year: Estelle M. Berkson, University of Vermont; Betty R. Brown and Shirley A. Newcomb, University of Nebraska; Dorothy L. Cassily and Mary Janetos, University of New Hampshire; Julia A. Chwalek, Boston University; Lucille E. Eder, University of Wisconsin; Ruth Formisano, New York University; Barbara Gervais, Framingham State Teachers College; Lois A. Kelly, Iowa State College; Betty Levine and Estelle Silverman, University of Minnesota; Ruth A. Long, Acadia University; Phyllis Palmquist, Clarke College; Frances Raw and Phyllis Wickert, University of Kansas; C. Ruth Suisman, University of Connecticut; and Edith B. Wax, Florida State Teachers College. Recent graduates have been placed as follows: Betty Davis, Newton Hospital; Angela M. Abbadessa, Shirley Berman, and Maria Ballirano, Jewish Hospital, Brooklyn; Saralee Bender, Boston Lying-in Hospital; Esther Issenberg, assistant therapeutic dietitian, Beth Israel Hospital; Evelyn Temple, dietitian, Bethlehem-Hingham Shipyards; Phyllis M. Pierce, assistant administrative dietitian, Beth Israel Hospital; Gertrude Kain, assistant therapeutic dietitian, Mt. Sinai Hospital, New York.

Of the 1943–44 class of student dietitians, Massachusetts General Hospital, the following are filling staff positions: Phyllis Danforth, Clarice Piper, Mary Macomber, Betty Davis, Annette Durkee, Dorothea Ellsner. Other graduates and their present positions are: Daphne Schaub, St. Luke's Hospital, Racine, Wisconsin; Seleta Wiseman, Duke University Hospital; Louise Taliak, St. Luke's Hospital, Cleveland; Evelyn Whiteley, New England Deaconess Hospital. Appointees to the Army among recent graduates include: Elizabeth Thibeault, Jane Anne Oliver, Kathryn Montgomery, and Mavis Munch.

News of New England Baptist Hospital dietitians includes the following marriage announcement: Mary Lambertson to Lt. Donald Kaiser on May 24; and from New England Deaconess Hospital: Helen Elder to Mr. Rudolph Boebel on May 20, Marion MacDonald to Mr. Richard Lynch on September 4. Mary Randolph Prozeller, formerly dietitian, New England Deaconess Hospital, is now living in Key West, Florida.

Students who began their internship at Peter Bent Brigham Hospital in July include: Dorothy Osborne, State College of Washington; Ruth Mather, Rhode Island State College; Orpha Muus, Iowa State College; Ellie M. Sheridan, College of St. Teresa; Ruth Klinger, Lake Erie College; Harriet Grunow, Michigan State College; Kathleen Golden, St. Joseph's College. Those who began their internship in September include: Julia Reade, University of Georgia; Ruth Gorham, University of Vermont; Fredaline Hamner, University of Alabama; Beverly Van Deventer, Iowa State College; Marjorie Goodwin, Oregon State College; Helen Grix, Utah State College; Naomi Oursler, Oklahoma A. & M. College. Changes in staff include: Marion J. Brian, former metabolism dietitian, now at Fifth Avenue Hospital, New York, replaced by Mrs. Ruth C. Ferguson, recent graduate of Peter Bent Brigham Hospital; Mary Anna Frost, on leave of absence as clinical dietitian; Dorothy Steel, now medical ward dietitian; Barbara Coughlin, dietitian, private pavilion.

Betty Cavicchi was married to Dr. George Wood August 12.

Michigan Dietetic Association. The program for November 4, the Hotel Statler, Detroit, with Jane Porter, vice-president, Detroit Dietetic Association, presiding, includes: "Pointers on Wartime Purchasing," Frank J. Breusch, purchasing agent, Harper Hospital; "The Nutritionist and the Community," Dorothy Hacker, nutritionist, Visiting Nurse Association; "Practical Aspects in the Treatment of Diabetes," Dr. William Reveno, Department of Internal Medicine, Harper Hospital. Mary M. Harrington, president, Michigan Dietetic Association, is presiding at a luncheon meeting at which Dr. John M. Dorsey, acting director, Children's Center, Detroit, speaks on "Psychological Aspects of Food." Workshops on administration, diet therapy, professional education, and community education are to conclude the meeting.

Philadelphia Dietetic Association. The 1944–45 program opened with a "Fall Get Together" on September 26 at Friends Hospital. Members of the association were invited to attend a joint meeting of the State Nutrition Council and Council of Defense on September 22–23 at Harrisburg.

Utah Dietetic Association. Officers for the coming year include: president, Evelyn Bushey Quinn, 2220 Laird Way, Salt Lake City; president-elect, Katharine S. Bielby, Latter-Day Saints Hospital; vice-president, Lt. Dorothy F. Marden, and secretary, Lt. Frances Kelton, Bushnell General Hospital, Brigham City; treasurer, Margaret R. Rosenmeier, Veterans Administration Facility; program chairman, Mildred Bowers, Union Building, University of Utah. Section chairmen include the following: Community Education, Madonna Herbert, Dee Hospital, Ogden; Professional Education, Lt. Ruth C. Kearnes, Station Hospital, Fort Douglas; Diet Therapy, Wanda Mathews, and Food Administration, Anna Marie Driscoll, both of Salt Lake City.

News From Advertisers and Exhibitors. The *National Canners Association*, Washington, D. C., has issued a folder supplementing their *Information Letter*, dealing with the research program on the nutritive value of canned foods. Excerpts are included covering the retention of nutrients and vitamins during canning, storage studies, and correlation between bioassays and the newer chemical and microbiological methods of analysis. The general program for the third year of this research project is outlined.

The *National Peanut Council, Inc.*, Atlanta, reports that the 1944 peanut crop is expected to total 7% above the record-breaking harvest of 1943, thus assuring a plentiful supply of peanuts for peanut butter, peanut candy, and salted peanuts. The latter, frequently requested in letters from servicemen, are being specially packed for overseas shipment.

The edible peanut industry will get the "pick of the crop" this year according to peanut purchasing plans released by the Commodity Credit Corporation and quoted in the National Peanut Council's *Bulletin* for August-September. All peanuts from the 1944 crop not grading better than U. S. No. 2 will be used in the crushing industry. Recipes for spanish corn slaw and green Lima bean and bacon salad, both of which call for chopped salted peanuts as an ingredient, are included in this issue.

The *Anstice Company, Inc.*, Rochester, N. Y., announces that Capt. Floyd H. Emery, U. S. Marine Corps Reserve, who spent the last two years at Camp Pendleton in organizational work, has been released from active service and will resume his duties as sales manager of the company.

American Meat Institute, Chicago, stated recently: "The average dressed weight of carcasses during the past 6 months has been 4% lighter than for the same period in 1943. Therefore, on a dressed carcass weighing 500 lb. the consumer has 20 lb. less meat, or the equivalent of 4 roasts of 5 lb. each. For the million cattle of all grades slaughtered in June under federal inspection, that means 2,000,000 lb. meat less than formerly. The industry expects little change in the situation with respect to the top grades of beef. It threatens to get worse. It is reasonable to presume since military needs are not getting smaller, and since the proportion of better grades of cattle coming to the markets in the months ahead will be smaller, the percentage for the armed forces may have to be increased. In addition to the above factors, it should also be emphasized that the ever growing black market is diverting thousands of the top grades of cattle from legitimate meat packers, included among which are the federally inspected plants which are the only ones furnishing men and women in uniform with meat. These factors taken together mean a real scarcity of the better grades of beef. Unprecedented numbers of cattle are on the ranges and farms, and the Government predicts unusually heavy marketings of these grass-fed cattle in the next few months."

National Canners Association, 1739 H Street, N.W., Washington 6, D. C., has again prepared for distribution a table showing point values as of September 17 for canned fruits and fruit juices in the sizes found most frequently in retail stores. This also gives the approximate equivalents in cupfuls for each weight group.

General Foods Corporation, 250 Park Avenue, New York, is distributing "The Story of Diamond Crystal Salt," from the time it is drawn from a depth of 2500 ft. until it makes a final appearance in the familiar red and yellow package, told in a new, profusely-illustrated 24-page booklet now available on application to the Diamond Crystal Salt Company, Inc., St. Clair, Mich. Helpful hints to everyday living, through unusual uses of salt, are contained in a special section entitled "Salt Secrets."

The Cream of Wheat Corporation, Minneapolis 13, reports that copies of the 1944 Vitamin Food Chart, providing much nutrition information in simple form, are still available and will be forwarded upon application. Also available is a new recipe folder containing attractive meat substitute recipes such as Creole meat loaf, barbecue hamburgers, and Cream of Wheat scrapple.

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The U. S. Navy Cook Book: Problems Involved in Editing

The new Navy cook book had its beginning four years ago, when Mr. George R. Le Sauvage, a former officer in the U. S. Naval Reserve, asked Dr. Mary deGarmo Bryan, head of the Department of Institution Management, Teachers College, Columbia University, if she would form and head a committee composed of members of the American Restaurant Association for the purpose of revising the Navy cook book then in use.

This was done, and the completed manuscript for the new book was submitted in January 1943 to Capt. E. F. Ney, in charge of the Navy Subsistence Division.

In order to understand some of the problems involved in the complete and final revision of this book, it is well to note that this work was organized, planned, and the greater part of it put into execution while our country was still at peace. Then came December 7, 1941, and the country was involved in World War II.

Naturally the War and Navy Departments were the first to be greatly affected. Increase in armaments and supplies meant an increase in personnel which in turn involved food—its supply and preparation. During 1942 problems of all descriptions relating to food began to pour into the Subsistence Division of the Navy Bureau of Supplies and Accounts in Washington. So a civilian food consultant, the writer, was brought in and later three Waves, all trained home economists, were added to the Subsistence staff during the early part of 1943 to work on the cook book and related problems.

As the number of enlisted men increased in the Navy, so the variety and number of problems increased in proportion. Training schools and shore establishments, some of them housing thousands of men, all of whom needed three balanced meals each day, had to be put into operation. Cooks and bakers had to be trained, almost overnight, and short cuts devised in such training, but the principles of cookery and mess management had to be fully emphasized. New types of food began to appear and these had to be tested and recipes developed.

Some of you may ask, what has all this to do with the Navy cook book? The new cook book had to answer many of the current wartime food problems which began to confront commissary stewards and the cooks and bakers of the Navy, both ashore and afloat. Some of its style and content, therefore, had to be changed to meet existing conditions.

The great increase in the number of men in the shore establishments brought about certain problems. For example, the shore stations are able to purchase fresh products—fruits, vegetables, fish, and meat, which are used not only because of their availability and nutritional value but also because by using fresh products the canned and other packaged products can be relased for use aboard ship and overseas.

You may recall that not very long after our entrance into the war, tin was growing scarce. Not having anticipated this when the Navy cook book was in the preliminary stages of revision, the recipes in the chapter on vegetables which had been developed and recorded on the basis of using No. 10 cans, had to be considerably revised. Due to the tin shortage, the canners were having difficulty in supplying as many products in No. 10 tins as were needed by the Navy. The recipes, accordingly, had to be rewritten on the basis of using fresh vegetables and the recipes for canned vegetables recalculated, giving both weights and measures, so that the commissary steward, when using canned products, could adapt them to whatever size can was issued.

As you can readily see, the Navy has a "two-way" feeding problem to consider—one for land and one for sea—and it probably always will. On board ship most of the meat purchased is boneless, to conserve storage space. On shore stations it is possible to serve meat with "bone in," and the men can enjoy the spareribs and sauerkraut denied those at sea. All the meat recipes, therefore, specify the amounts needed for meat with "bone in" and with "bone out."

You will readily see that the commissary steward at sea in most instances today would have to forego the traditional soup stockpot in which bones are so important. Because of this and also from the nutrition standpoint, the necessity of retaining the liquids from canned vegetables for use in making soups and gravies has been stressed throughout.

The chapter on meat is the largest single chapter in the book. It embraces all the types of meat which the Navy purchases. The recipes have been written in such detail that the most inexperienced cook, if he intelligently follows them, can produce meat dishes which meet the standards of epicures.

Since so many of the cooks are relatively inexperienced, special precautions had to be emphasized in regard to storage temperatures and handling of meat, so that spoilage could be avoided. Much of the meat to be used at sea is frozen and requires careful handling.

Special ham known as war or overseas ham, containing a high salt content, was developed by the meat industry for use by the services. Special instructions and recipes for these hams had to be developed and tested and incorporated in the cook book.

Just as the civilian population has endeavored to salvage as much fat as possible, so the commissary personnel of the Navy has been doing its bit in this campaign. On page 92 of the cook book are complete instructions on how to render fat, suitable for use with equipment in the galley of the smaller auxiliary ship as well as the most modern and extensive equipment installed in the large battleships and shore establishments.

Another problem which needed considerable attention pertained to dehydrated foods. I have heard this war described as a chemists' war and most certainly the food chemists and technologists have been exceedingly busy during the past two years developing and improving methods for dehydrating and concentrating many kinds of foods. The Navy is one of the largest purchasers of such foods which conserve storage space aboard ship and can be used to great advantage at advance bases.

Dehydrated potatoes—shredded, cubed, and julienne-style—are purchased in thousands of pounds by the Navy. These are well liked and easy to prepare. Apple nuggets—small pieces of dehydrated apples—are used extensively for pies, puddings, and apple sauce. Dried cranberries—whole, flaked, or sliced—are also used in large quantities. Powdered milk and powdered eggs play a large role in the bluejacket's diet.

But in order to use these and other new products, numerous experiments had to be made and the recipes tested in the general mess in naval shore stations before they could be finally approved and incorporated in the cook book. Special instruction also had to be given for reconstituting and preparing dehydrated foods for cooking, so that when they are served to the men they will be tasty and palatable.

Approximately one fourth of the entire cook book is allotted to baking. Many of the bakeshops on the large ships and shore establishments are equipped with the most modern commercial equipment, developed to produce baked goods of the finest quality. This, of course, calls for knowledge of the latest methods and techniques in the baking industry.

The granular dehydrated yeast (dry, activated yeast), which the Navy is purchasing in tremendously large quantities to take the place of compressed yeast, since it requires just one half the amount of space and perhaps a little less care in storage, can be considered a recent development. Information about it and how to use it has been included in the book.

One day when we were editing the baking section, Captain Ney asked me if we were including a formula for making machine-made doughnuts—6000 in one hour—or 500 dozen. I was delighted that I could answer in the affirmative, because the Navy has such doughnut-making machines, although in some of the smaller bakeshops the doughnuts are still cut by hand.

The Navy bakeshops, aboard ship especially, produce thousands of loaves of bread every day. One recent revision was to change the Navy bread formula to coincide with that of the Army. This not only facilitated the purchase of ingredients (the Army purchases a great deal of the supplies for the Navy), but provided a standard bread recipe which can be used by both Army and Navy bakers.

Wherever large numbers of men—up to the thousands—have to be fed, time is an extremely important factor. The methods of making cakes, cookies, and sweet yeast goods were therefore changed with the time factor in mind, wherever it was thought necessary by the Navy Research Division.

In conclusion may I say that without the fine, constructive, and major basic work on the revision of the book as submitted by Dr. Bryan and her committee, the Cook Book of the United States Navy would still be in the process of making. Credit should also be given to Mary I. Barber and her associates in the Office of the Quartermaster General, War Department, who were extremely helpful and most cooperative in supplying information for the cook book.—*Ina S. Lindman, Director of Home Economics, United Fruit Company, New York, and Food Consultant to the Navy, 1942–44.* [*Copies of the Navy Cook Book are obtainable on application to the U. S. Government Printing Office, Washington, D. C., at $1.50 each. Ed.*]

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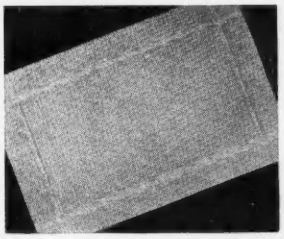

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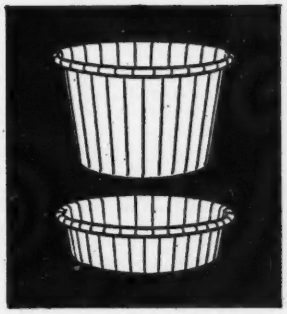

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Army Rations in Action

The old C ration consisted of 3 meat items and 3 B units, a can containing C biscuits, hard candy, and beverages. The new C ration has 10 meat items, such as Frankfurters and Beans, Meat and Noodles, Chicken and Vegetables, Ham and Lima Beans, and Pork with Rice. The new B units contain a variety of biscuits that are more tender and palatable, a jam for spread, and new confections such as candy-coated peanuts and caramels. The breakfast unit contains a cereal disc that can be prepared with the addition of either hot or cold water. An accessory pack containing cigarettes, toilet tissue, salt and halazone tablets is issued with each ration.

In place of 3 meats in the K ration, we now have 9, including 5 new items: Chop Suey, Fried Ham, Pork Steaks, Chip Steaks, and Boned Chicken. The biscuits also have been improved and a larger variety developed. The breakfast unit now contains a block of compressed cereal. The noon meal has a larger variety of beverages, such as orange, grape, or lemon. In addition to the cigarettes, matches, and toilet tissue, we have added salt and halazone tablets.

As a result of our combat experience it was found that another ration was necessary that could be used after landing and before the regular supply of rations could be set up. The new 10-1 ration which was developed consists of a hot breakfast, a pocket lunch for the noon meal, and a hot evening meal. Ten rations are packed in one box and there are 5 different menus.

Although great progress has been made in the development of operational ration and other food items for the troops overseas, much nutrition research is still necessary. Possibly the most difficult one to study is the lack of appetite under combat. Is this due to excess secretion of adrenalin, the blood sugar level, or both? Is the science of nutrition adequate as a guide for constructing rations for modern warfare? Rations, although nutritionally adequate from the standpoint of the recommended allowances, were not acceptable as a steady diet.

The more palatable rations often are the least acceptable later. The reason for this is not obvious. Monotony of foods is not often objectionable—people habitually choose a monotonous diet and tend to resist change. If the soldier is given enough of the foods he desires, on the whole he will receive an adequate diet. These foods are: bread (considered a morale builder at the front), milk and other dairy products, fruit juices and canned fruits, beef. Theoretically, however, man has lost the ability to choose his food correctly, but it may be that when there is a direct relationship between food and survival, the instinct for correct choice is partially restored.

In studying the feeding of aviators, these and many more problems confront us: the effect of food on the formation of intestinal gas, the specific role of carbohydrates and the deleterious effects of protein—is it protein per se which is deleterious, or certain of the amino acids?—*Abstract of an address by Col. Rohland A. Isker, Director of the QMC Subsistence Research and Development Laboratory, Chicago 9, presented before the American Dietetic Association, Chicago, October 26, 1944.*

Dietitians' Graduation, Cook County Hospital

It was only six weeks before the senior dietitians would be completing their internship. I was on my way to class that day late in August when I heard rapid footsteps behind me, and looking back I saw one of the students, a little out of breath, making an effort at composure and saying she would like to ask me a question. I nodded and she proceeded, "Are we going to have graduation like the other girls, or do we have to miss it if we go into the Army?" I assured her that graduation exercises were for all graduates and if some were leaving for the Army we would have the exercises while all the members of the class were still in our school.

Before setting the date for graduation we consult the house director and the director of the School of Nursing in order to select a date which does not conflict with any other social activity, as well as a date when our dinner can be scheduled with the dietary staff. Then I ask the members of the junior class to meet with me. At this meeting I present the general plan of our graduation and invite them to serve with me as a committee to plan for the special features which always make the exercises more individual. At the same time it gives me an opportunity to work closely with the group and we all learn to know each other better. Usually the students respond eagerly for they feel indebted to those who have helped them when they first entered training. Our students are admitted twice a year, hence the spirit of class allegiance and responsibility serves as a stimulus for competition in social achievement as well as in the practice field in the hospital.

The senior students serve as the leaders, and in order to carry our plans through to successful completion we find it serves our purpose best to elect officer representatives in the group. Three officers are elected—a president, vice-president, and secretary-treasurer. As plans are developed, committee chairmen are elected or appointed according to the wishes of the group.

Preceding the graduation exercises a special dinner is served to the members of the graduating class, with the director of our School of Nursing as the speaker and a few of the faculty members of our graduate dietary staff as guests. The exercises are held in the assembly hall which is dressed up for the occasion with upholstered chairs and ferneries, as well as flowers (usually provided by the members of the graduate staff in honor of the graduates). The school furnishes a printed program which helps to lend dignity to the assembly. A reception follows for friends and relatives of the graduates at which simple refreshments are served.

In planning for the graduation, the committee accepts the responsibility of arranging for the table decorations for the dinner and reception. I usually describe what other classes have done to give them an idea of appropriate decorations and also to lend some continuity to the program as a whole. Very often the motif for the titles of the talks at the exercises is coordinated with the general plan of decoration, as for example this September, when the harvest theme seemed appropriate because of the season and the plentiful supply of home-grown fruits and vegetables. This theme was developed in the table decoration, using a small horn of plenty with fruits and vegetables arranged artistically on red autumn leaves. A bouquet of fall flowers in a brass bowl and tall tapers in matching brass candlesticks lent a very festive air to the dinner table as well as the table at the reception.

The exercises usually open with greetings from the Board of Directors read by the director of the School of Nursing, who also introduces the director of the Dietary Department who presides during the exercises. A member of the graduate staff customarily brings a message to the students—the title of which this year was "Seed Selection and Sowing." Next follows our main speaker of the evening. For our last program we invited an associate physician on the medical staff, who spoke on "The Harvest." At other times we have invited heads of home economics departments, outstanding members of our own profession, and representatives of the Dietary Committee of the Board of Directors. Usually the president of the junior class delivers a short message to the graduates, and a response from the vice-president of the senior class follows. This year the topic chosen by the president of the junior class was "Under Cultivation," and the response from the senior representative was "The Yield." Then follows my own message and the presentation of American Dietetic Association pins and certificates showing the satisfactory completion of the course in hospital dietetics.—*Millie E. Kalsem, Director, Dietary Department, Cook County Hospital, Chicago.*